Merchandising and Operating Features of Fairbanks-Morse's Three 1938 Lines Are Explained to Distributors

(Concluded from Page 1, Column 2)

of that refrigerator. Some of the responses were read to distributors over the public-address system; all owners, Mr. Jones said, had been unanimous in their praise of the refrigerators' convenience and operating economy.

Faced with rising costs of labor and materials, Mr. Jones declared, the company did not feel that it should present its distributors only a line of refrigerators with the Conservador, with sufficient mark-up for distributors and dealers, and still remain competitive in price with other lines not including this feature.

Therefore, he said, the company had decided to produce, in addition to Conservador models, a series of deluxe refrigerators including all other features except the Conservador, priced competitively with the lines being offered by other companies. The Conservador feature, he added, costs the company approximately $10 net additional in labor and material alone.

At this point, stage curtains were drawn back to reveal the "EL" series of models, which Mr. Jones predicted will be "the sensation of our refrigerator line for 1938." Units in this series, he said, have all the features which competitive lines offer, in addition to being their equal in quality and performance.

Presentation of new models was climaxed with the showing of the 1938 "Super Deluxe" series with the Conservador.

With the three series, Mr. Jones said, Fairbanks-Morse distributors and dealers are in a position to sell competitively in every price bracket.

In pointing out the sales features of the new Conservador line, Mr. Jones called attention to the Dulux cabinets, two-way door opener, sturdier door hangers, all-steel door, redesigned Conservador basket, new latch strike, moulded d[illegible] gasket, sliding food compartments, moonstone storage trays, flat bar shelves, blue Tenite shelf supports, sliding shelves of the flat bar type, and the "rhapsody in blue" fittings which characterize top models.

Improved ice freezing capacity, as much as 50% in some models, is another feature to which Mr. Jones directed distributors' attention. He also pointed to the "cube expeller" tray as a feature which may be effectively demonstrated. New horizontal type evaporator, he stated, allows better arrangement of ice trays, and adds 10% to shelf area.

Supporting the new refrigerator line will be the most extensive advertising campaign in the history of Fairbanks-Morse's home appliance division, Parker H. Ericksen, sales manager, said in outlining the company's plans for the coming year.

National advertising will be placed in the newspapers of all major cities, Mr. Ericksen said. This plan, first tried in the company's campaign on its 1938 radio line last summer, met with approval by distributors because it placed advertising where it was most needed, and where it could produce the most results.

"At this stage in our growth, we believe that our money will get the most results if it is used in newspapers," Mr. Ericksen said. "In other words, we are putting the advertising dollar right in your territory—right where we believe that dollar should be put. We are reaching the homes right in your own territories.

"We believe that your dealers will also like this sort of advertising. In fact, we had the dealer in mind when we decided to use this plan."

Under the company's 1938 advertising program, there will be two types of newspaper campaigns inserted by the factory—one for the "A" markets, the other for "B" markets. Refrigerator advertisements which are scheduled for "A" market cities will appear over the signature of the distributors' key accounts. These markets cover the main cities in each distributors' territory.

In "B" markets, other important cities, the factory will run advertisements featuring the complete line.

"In this way," Mr. Ericksen concluded, "there will be Fairbanks-Morse refrigerator advertising in all major cities of the United States, appearing next spring and summer over 'prestige' names in the 'A' schedule, supplemented by complete-line advertising on a national basis in the 'B' schedule."

Theme for the 1938 refrigerator advertising campaign, "26% More Quickly Usable Space," was introduced by John S. Garceau, advertising manager, in his presentation of advertising and sales promotion.

Newspaper advertising, display materials, and sales helps for 1938 will be based on the idea that the Conservador feature increases the practical capacity of the Fairbanks-Morse refrigerator, Mr. Garceau said. Results on which the company bases its claims were made in a series of laboratory tests supervised by Miss Meta Given, home economist.

In addition, the newspaper advertisements call attention to the "Penny Meter" tests which prove the operating economy of the refrigerators.

Mr. Garceau urged distributors to take full advantage of the advertisements by increasing the number of dealers in their territories. "These ads won't help you," he said, "unless you see to it that you are in a position to cash in on the interest that they will arouse."

A dealer—and an active one—in every merchandising center in the territory, is the only way in which a distributor can be equipped to cash in on all his profit opportunities with the new line, Mr. Garceau emphasized. "Otherwise," he warned, "you are cheating yourself and this company out of profits that are there for the asking."

He suggested that distributors send reprints of newspaper advertisements to dealers and prospective dealers. "Go after the dealer who is hard to get," he advised. "The dealer worth while is the dealer who is hard to get—because he will be just as hard for competition to swing away from your line as it was for you to sell him in the first place."

A new seven-piece direct mail campaign also has been prepared to aid distributors in getting new dealers. For wholesale representatives, there will be a portfolio of merchandising pages, describing the various sales helps available to dealers.

A new brochure is arranged to demonstrate the Conservador feature, by die-cut "doors" which open first to reveal the Conservador, next to show the rest of the cabinet interior.

New display material includes a series of colorful action displays for dealers' windows, including one which automatically opens and closes the Conservador. Other helps are illuminated backgrounds for floor displays, a new Penny Meter panel, store banners, window transfers, window streamers, bases for refrigerators, truck banners, metal signs, illuminated window signs, flasher signs for refrigerator tops, etc.

"Don't kill this refrigerator line with short discounts," Mr. Ericksen urged in a discussion of distributors' selling plans. "We ask you not to quote discounts so short that all the good dealers in your territory will turn your salesmen down cold, with the result that your men will be able to sell only the second and third rate dealers."

In his summary at the close of the convention, Mr. Jones urged distributors to hold their dealer showings as early as possible.

Fairbanks-Morse next year will again have a C.I.T. free floor plan, Mr. Jones announced. The plan will be operated as a cooperative arrangement with distributors; but where last year the 2½% finance cost was divided between the factory and distributors, this year the factory will pay 1½%, the distributor, 1%.

A winter skip-payment plan has also been arranged for Christmas buyers. Under its terms, any customer may buy a refrigerator after Nov. 20 and make his 10% down payment only, with no more payments to be made until the corresponding day of March, 1938, when regular payments start.

Also, terms of 5% down will be permitted for financing through C.I.T., provided the terms of the contract do not exceed 24 months.

McQUAY Cabinet Floor Type Room Coolers
McQUAY Floor Type Cooling Units
McQUAY Combination Fin Coil & Ice Cube Maker
McQUAY Comfort Coolers
McQUAY Refrigeration Coils
McQUAY Extended Surface Coils
McQUAY Product Coolers
McQUAY Unit Coolers
McQUAY Bare Tube Coils
McQUAY Suspended and Floor Type Blower Coolers
McQUAY Combination Coolers and Heaters
McQUAY Air Conditioning Coils
McQUAY Ice Cube Makers
McQUAY Evaporator Coils
McQUAY Blast Coils
McQUAY Cabinet Concealed Radiation
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WRITE FOR BULLETINS DESCRIPTIVE OF VARIOUS McQUAY PRODUCTS

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MINNEAPOLIS • MINNESOTA.

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Write for Sales Plan
COPELAND REFRIGERATION CORPORATION
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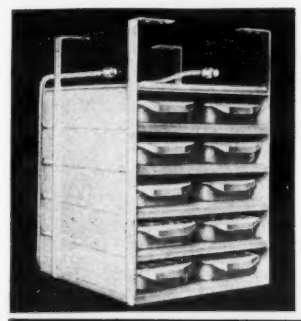

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With or Without Fin Coils
EFFICIENT, FAST FREEZING, DURABLE

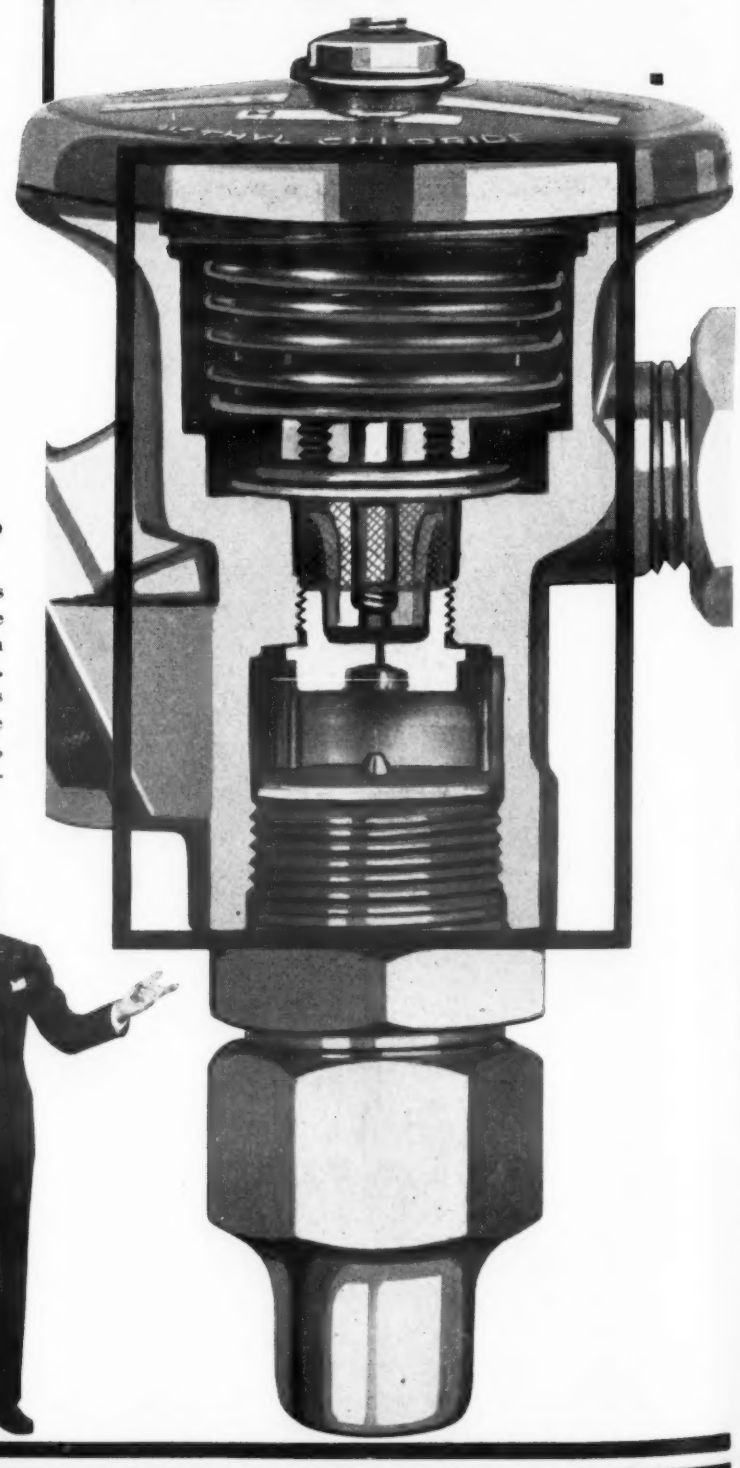
TRENTON AUTO RADIATOR WORKS, Trenton, N.J. NEW YORK PITTSBURG

WEATHERHEAD VALVES

- For easy installation on all refrigeration lines.
- Modernly made from extruded brass rod.

GENUINE WEATHERHEAD REFRIGERATION PARTS
WEATHERHEAD • 300 E. 131 ST. • CLEVELAND, OHIO

. . . leak proof . . .



Non-porous
Brass Forged Bodies . . . .

Engineers will understand the precautions against Leakage and "Charge" Loss when we say that Brass FORGED Bodies are used on all A-P Thermostatic Expansion Valves. Non-porous, of unequalled density, Brass Forgings will safely withstand the extreme Tests against Leakage given all A-P Valves, particularly the tremendous 400-lb. Air pressure used in all tests.

Every A-P Expansion Valve in factory tests and inspection must undergo far more stress and strain than it will ever receive in actual Refrigeration or Air Conditioning installations. That's why you may be certain that A-P Expansion Valves will never "let you down" when your reputation and profit depends upon a successful installation. And thereby lies the A-P Popularity.

A-P THERMOSTATIC EXPANSION VALVE

This cross section of the Model 205 Expansion Valve illustrates the thick Forged Brass Body and the important Mechanical Lock,—two exclusive A-P features providing positive protection against Leakage and "Charge" Loss.

PROGRESSIVE JOBBERS EVERYWHERE STOCK A-P CONTROLS

AUTOMATIC PRODUCTS COMPANY
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THE NEWSPAPER OF THE INDUSTRY

AIR CONDITIONING AND REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

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Member Audit Bureau of Circulations. Member Associated Business Papers.

VOL. 22, No. 14, SERIAL No. 454
ISSUED EVERY WEDNESDAY

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Cleveland Area Sales Increase 19% in 10 Mos.

Omaha Sales Also Gain; Sioux City Reports Slight Decrease

CLEVELAND — More than 35,000 electric refrigerators were sold in the Cleveland and Cuyahoga county territory during the first 10 months of this year, according to reports by distributors and dealers to the Electrical League of Cleveland. This is an increase of 19.5% over sales for the first 10 months of 1936.

Sales during October only totaled 2,044 units, an increase of 54% over those for the same month last year.

Appliance Sales in Omaha Total 42,281 Units

OMAHA—Electric appliance sales in this territory, as reported to the Electric Kitchen Bureau of Nebraska Power Co. by cooperating dealers, amounted to 42,281 units for the first nine months of the year, compared to 40,413 units sold during the corresponding period of 1936.

Refrigerator sales totaled 6,195 for the 1937 period, against 5,960 for 1936; ranges, 234 against 117; water heaters, 64 against 93.

Sioux City Outlets Sell 2,278 Refrigerators

SIOUX CITY, Iowa — Sales of household electric refrigerators in the Sioux City territory during the first 10 months of this year totaled 2,278 units, according to statistics compiled by Victor O. Stafford, merchandise sales manager of Sioux City Gas & Electric Co. This compares with sales of 2,390 units for the same period of 1936.

Of this year's refrigerator sales, only 15 were made by the utility, the report reveals. The remaining 2,263 units were sold by dealers. This compares with 2,386 dealer sales during the 10 months of last year.

Sales of radios for the first 10 months of the year totaled 3,519 sets, as against 3,626 during the same months of last year. Electric washer sales totaled 2,005, compared with 2,174 during the first 10 months of last year; ironer sales totaled 155 units, against 141 in the same period of 1936.

Independent dealers accounted for all but 28 of this year's radio sales, of all but eight washers, and two ironers.

Gas range sales during the first 10 months totaled 1,339, compared with 1,613 for the same period of last year. An even 1,300 of the sales were made by independent dealers.

Gas refrigerator sales so far this year totaled 25 units, compared with 37 during the similar period of last year; independent dealers accounted for all but one of this year's sales.

Fair Trade Acts to Face Court Tests In Two States

ROCHESTER, Minn.—Based on a deliberate violation, Minnesota's new fair trade law is the subject of a court test here which is expected to reach the United States Supreme Court and bring a final determination of whether this state, or other states which have recently enacted similar laws, may prohibit stores from offering "loss leaders" or from undercutting prices.

George T. Hilden opened a self-service, cut-rate drug store not far from the Mayo clinic here and, although familiar with the law which was enacted last spring, began underselling some of his competitors. He announced that he was willing to have his case go to the courts for a test of his belief that the state has no right to prevent him from giving bargains to customers.

Each week he advertised a few items, which were to be sold at just above or slightly below cost.

"I feel that after you have bought and paid for merchandise, it is yours to do with it as you feel, even if you want to give it away to attract trade to your store," Mr. Hilden said.

Complaints from competitors brought the first legal step, and prosecution of the drug store operator is being undertaken by Hayes Dansingburg, Olmsted county attorney.

Both parties to the suit feel that on its final outcome rests the future of similar fair trade laws in other states, and in states where enactment of such laws is being urged.

Wyoming Law Interferes With Private Business, Suit Charges

CHEYENNE, Wyo. — Wyoming's newly-enacted unfair competition act, which prohibits sale of merchandise below cost in an effort to destroy competition, is subject of an attack before the state supreme court here.

Carleton A. Lathrop, Cheyenne attorney, in a brief filed with the court, attacked the law as arbitrary interference with the rights of business and the consumer. He maintained it abridges the constitutional privileges of a man by depriving him of liberty and property without due process of law.

"The upholding of such legislation would support the general fixing of prices for farm products, groceries, shoes, clothing, all the necessities of modern civilization, as well as labor, when some legislature finds and declares such action advisable and for the public good," Mr. Lathrop said. "A legislature cannot by legislative enactment convert private business into a public utility.

"Not only does the Wyoming statue interfere arbitrarily with the rights of the retailer to conduct his business according to his own standards, but it takes away the liberty of 200,000 consumers to buy the necessities of life in an open market."

Universal Cooler Direct-to-Dealer Sales Up 41%

DETROIT — Sales of household electric refrigerators direct to dealers under the "Universal Cooler" name showed an increase of 41% during the fiscal year ended Sept. 30, 1937, directors of Universal Cooler Corp. report in their annual statement on operations released last week.

Substantial increases in sales were made in all divisions except the large account private brand domestic division, which showed a substantial loss in sales and accounted for the decrease in total sales volume this year, compared with last year. Net sales for this year totaled $3,978,546.25, compared to $5,248,813.87 the previous year.

Net earnings for the fiscal year ended Sept. 30 totaled $61,413.37 after provision for federal income tax and surtax on undistributed profits, as compared with a net profit of $332,046.68 after federal income and excess profits tax in the preceding year.

Ratio of current assets to current liabilities, as reflected in the balance sheet, shows a ratio of 4.13 to 1 this year, compared with a showing of 2.29 to 1 at the end of the previous fiscal year.

Six new compressors have been added to the company's line of products—three for domestic refrigeration use, three for commercial. The company also has developed a line of self-contained room coolers, to be marketed the coming year, it was reported.

Since the end of the fiscal year, Nash-Kelvinator Corp. has completed its option, and has purchased a one-third interest in the company's outstanding stock for $255,750. Net proceeds from this sale have been added to the company's working capital, to strengthen its cash position.

A dividend of 25 cents per share on the "A" stock was declared, payable on Dec. 15 to stockholders of record at the close of business on Dec. 6.

Leonard Distributors Meet Dec. 3-4

DETROIT—Leonard division of Nash-Kelvinator Corp. will lift the lid on its 1938 refrigerator selling seasons Friday and Saturday, Dec. 3 and 4, when it plays host to from 400 to 500 of its key distributing personnel in a national distributor's convention, at which its 1938 sales and product plans will be made public.

The convention will be in the form of a "go ahead" signal for the Leonard distributing organization, since the new models are ready for shipment and sales plans are all formulated.

Attending the convention will be the Leonard distributors and their sales managers, sales promotion managers, wholesale men, and key dealers.

11 Restyled Crosley Shelvador Models Shown at Convention

• • •

Wile Will Manage Engineering Dept. Of Savage Arms

UTICA, N. Y.—Daniel D. Wile, who recently resigned his position as chief engineer of the refrigeration and air-conditioning division of Detroit Lubricator Co., has been appointed chief engineer of the refrigeration department of Savage Arms Corp., according to announcement made by officials of the Savage plant here.

Mr. Wile had been associated with Detroit Lubricator Co. since 1927, prior to which time he was connected with the American Radiator Co. in its research engineering, and the accessories division laboratory. Mr.

(*Concluded on Page 22, Column 1*)

Stangle Heads Home Air-Conditioning Work For Westinghouse

MANSFIELD — William Hull Stangle will direct the recently established residential air-conditioning activities of Westinghouse Electric & Mfg. Co., according to P. Y. Danley, manager of the refrigeration and air-conditioning department.

An experienced merchandiser, architect, and engineer, Mr. Stangle has been connected with Carrier Corp., Hearst Publications, Raymond Hood, Norman Bel Geddes, The Barrett Co., and others, in the design, application, and merchandising of air-conditioning and building equipment.

Several of the largest air-conditioning installations in New York City have been made in buildings on which Mr. Stangle was the architectural superintendent.

Since he joined Westinghouse a year ago, he has been conducting an exhaustive survey of the residential air-conditioning market, the result of which Westinghouse is using as the basis of its entrance into the residential air-conditioning field.

Craig Named Assistant Crosley Engineer

CINCINNATI—J. W. Craig has been appointed assistant to R. H. Money, chief refrigeration engineer of Crosley Radio Corp., according to an announcement made by Louis M. Crosley, vice president and general manager.

A graduate of the University of Dayton in 1929, Mr. Craig completed the student engineers' course at the National Cash Register Co. and then joined the engineering staff of Frigidaire division, General Motors Corp., remaining there until his Crosley appointment.

Teague Designs Cabinet For New Line; Gas Range Is Introduced

CINCINNATI, Nov. 29—In the largest refrigerator convention in its history, Crosley Radio Corp. today showed 400 of its distributors and their sales and service managers a line of Shelvador electric refrigerators for 1938 in 11 models, ranging in size from 3 to 7.1 cu. ft. net storage capacity, and incorporating new features of economy, capacity, and performance.

Also shown to distributors was a line of Crosley gas ranges in seven models, featured by a "Mystic Oven" arrangement which permits the housewife to start her meal as early as 8 a.m., be gone throughout the day, and return at 6 p.m. to find her dinner cooked and ready to serve.

Several changes have been made in the exterior appearance of the 1938 Shelvador line, which was designed by Walter Dorwin Teague, noted industrial designer. Cabinets are smoothly streamlined, and a note of distinction is added by two parallel lines running vertically down the cabinet front.

The "dented" corners have been retained on cabinets to keep them distinctly "Crosley" in appearance,

(*Continued on Page 2, Column 1*)

Cleveland Dealers Plug Loopholes in Code

CLEVELAND—Loopholes in Cleveland's proposed appliance advertising code, formulated by the Better Business Bureau at the suggestion of distributors in this area, were plugged last week at a meeting of appliance retailers called by the Better Business Bureau and headed by William Farrar, the bureau's secretary-manager.

Prior to the meeting of the retailers, the distributors already had approved the tentative regulations, and it was understood that local newspapers, radio stations, and other advertising media were willing to

(*Concluded on Page 8, Column 1*)

Appliance Display Planned At Furnishing Exhibit

CHICAGO—A unified major appliance display, occupying more space than ever before in the show's history, will be a feature of the National House Furnishing Exhibit to be held Jan. 9 to 15 at the Stevens hotel.

The exhibit is scheduled to be open from 8:30 a.m. to 6:30 p.m. daily, except Monday and Tuesday when the closing hour will be 9:30 p.m.

The annual buyers' and manufacturers' banquet will be held Wednesday evening, Jan. 12, in the hotel's grand ballroom. The Manufacturers and Housewares Club will meet the following day.

Crosley Executives and Engineers Drive Ahead to Perfect Coming Year's Products and Sales Plans

These "key men" in Crosley's refrigeration engineering and production activities were photographed by the editor on the eve of their convention. From left to right are (1) John W. Craig, new assistant to the chief refrigeration engineer, looking over a new part for the Crosley Shelvador held in the hands of Herbert Money, chief engineer of the refrigeration division; (2) Mr. Money explains it in detail to Charles R. D'Olive, vice president in charge of the refrigeration division; (3) Mr. D'Olive takes hold and does a little personal examining; (4) Vice President D'Olive turns to merchandising problems with Clarence S. Tay, head of Crosley Distributing Corp., Chicago, and both seem "very happy about the whole thing."

Stainless Steel Breaker Strips Help to Dress Up Crosley Shelvadors; New 'Speede-Cube' Tray Release Used

(*Continued from Page 1, Column 5*)

but the cabinet base structure has been modernized, made to touch the floor all the way around, and the nameplate has been simplified.

Another distinctive feature on the new Crosley Deluxe models is the use of stainless steel breaker strips, lending an air of dignity to the cabinet interior.

The Shelvador, as in the past, continues to be the outstanding Crosley sales feature, but several other conveniences have been added to the new models.

'SPEEDE-CUBE' RELEASE

Outstanding of these is the "Speede-Cube" quick-action ice cube release, the development of Powel Crosley, Jr., president of the company. With these ice trays, standard on Deluxe models, it is claimed that it is not necessary to loosen cubes under the faucet, and that any number from two cubes to the contents of the tray may be quickly and easily removed.

Center divider of the ice tray has in it a square-cornered bar. When this bar is raised, by means of an ice-tray release lever, which is furnished, the grids are spread apart, separating the ice cubes from the tray. All of the cubes, it is claimed, are instantly released; however, only as many as are required need be removed.

The same lever used to loosen the ice cubes is also used to loosen the trays from the freezer shelves. A hinged attachment is used in loosening double-depth trays.

Cold control in the new Crosleys has an 18-point range, permitting the use to varying the freezing speed according to needs, both for economy and for proper food protection. Two points on the colored indicator of the cold dial permit "economy" setting when demand for refrigeration is light, or when the family is away on vacation.

BUILT-IN THERMOMETER

Built-in thermometer, indicating "safety zone" temperatures, is built in the door of the cooling unit on all except the two smallest models in the line.

All Deluxe models also are equipped with a set of three glass Shelvador dishes, for storage of left-overs. These, as their name indicates, are designed to be stored in the Shelvador itself.

The Storadrawer, dry non-refrigerated storage compartment, has been refined for greater storage capacity. When closed it fits flush with the ebony base of the cabinet. A new flat-bar chrome handle has been added.

A crisper, with chrome handle and removable wire-grid bottom is standard on all models in the 1938 Deluxe line. Fitting in the bottom of the cabinet interior, the crisper top is fastened to the under-side of the bottom shelf. Designed for vegetable storage, the crisper also may be used for chilling salads, fruit dishes, candy, gelatin, etc.

Large glass cold storage tray fits under the freezer compartment in all models; the tray, in addition to being usable in defrosting, is also designed as a storage spot for extra ice cubes, or for chilling and storing frozen desserts.

Door handle on the new models is of the "knee-action" type, of bright chromium, and may be operated by either push or pull.

Musical Shelvador

This is a "Musical Shelvador"; one of the standard models in Crosley's line fitted with a radio.

A section of the lower shelf on Deluxe model Shelvadors may be lifted out, for storage of bulky items such as roasts, a turkey, or a number of tall bottles. Hinged shelves at either side of the freezer compartment also may be lifted up or removed for tall container storage space. Interior shelving has been arranged to provide the greatest possible storage room. Shelves are of the flat-bar type, and are spaced to prevent tipping.

RADIO MODELS

In a continuation of its move made this year, Crosley in 1938 will make available a radio top, at additional cost, so that the housewife, if she desires, may have music with her meals. A five-tube super-heterodyne radio is used. With the redesigned nameplate on Deluxe models, it is claimed that the change from standard to radio top can be made by a good service man in about 15 minutes.

Speaker grille and control knobs take the place of the escutcheon on the front of the refrigerator, when the radio is installed. The control knobs match other Shelvador hardware.

Hermetically sealed, oil-cooled compressor is used in all 1938 models, and is mounted in top of the cabinet. Improvements made in the mechanism of this reciprocating-type unit are said to have increased its operation efficiency and economy. Large area of radiating surface of the double section, still-air condenser is said to give maximum heat dissipation. Due to the flue-like design, the air is said to be in constant circulation.

SPRING-MOUNTED UNIT

Refrigerating unit is mounted on four large, shock-absorbing springs, for quick and vibrationless operation. Food compartment is sealed from compressor compartment by a tapered frame of live rubber, into which the wedge-shaped base of the condensing unit fits. This sealing is said to add to operating economy.

Insulation in all models is Owens-Illinois glass wool. Freon-12 is the refrigerant. All cabinets are Bonderized, and exterior finish throughout the line is in Dulux.

BERGER TAKES CHARGE

Thomas W. Berger, general sales manager, was in charge of Monday's convention sessions.

In his address welcoming distributors, President Powel Crosley, Jr., after dwelling briefly on the misfortunes which last winter's flood and fire had done to the company's refrigerator operations, said that this year's convention attendance, the largest in Crosley history, was "a testimonial to you distributors' confidence in the Crosley company."

Next year, he went on, Crosley will give its field forces "better merchandise in greater quantities than ever before."

Turning to the current business recession, Mr. Crosley said that it was a problem which could, and he believed would, be handled by Washington. The future, Mr. Crosley said, will probably see a more sympathetic attitude toward business on the part of the Roosevelt administration.

"That change in attitude will do much to start things back," he concluded.

D'OLIVE INTROD

Next speaker was Charles R. D'Olive, vice president in charge of refrigeration for the company.

"Everything's in tune," he said, "and we're on our way—my only hope for you is that you don't miss the boat."

First new product to be introduced was the new line of gas ranges. This part of the program was handled by R. O'Connor. Pointing to the potentialities in the gas range field, particularly with the range as a companion product to the electric refrigerator, Mr. O'Connor showed charts indicating that range sales, down during the early days of the depression, picked up again in a curve almost exactly similar to that of refrigeration sales during the same period.

Another advantage cited by Mr. O'Connor for refrigeration dealers in the gas range field was that range sales, for the most part, are up during the months when refrigeration sales are down. Merchandising of ranges, he contended, will enable the dealer to keep his sales curve more nearly level throughout the year.

He urged that distributors and dealers "key in" the range as a companion to the refrigerator. When they see their new refrigerator, he declared, women want a new range; so selling them this product on a step-by-step basis is not a difficult matter.

PRICES OF RANGES

The new Crosley ranges are approved by the American Gas Association. Seven models were shown in the line, the prices ranging from $59.95 to $144.95 for the unit with the full "Mystic Oven" feature.

Following Mr. O'Connor, Mr. Berger said that the ranges are now ready for delivery. A pre-showing to key accounts in a large city recently, he revealed, had resulted in 250 orders from these few dealers alone. The "Mystic Oven," Mr. Berger emphasized, is as much an exclusive feature in Crosley ranges as is the Shelvador in Crosley refrigerators.

Turning next to radios, Mr. Berger explained some of the recent improvements which have been made in various models. These included an arrangement for remote control of push-button models, and a change in the push-button arrangement itself so that it need not be held down.

At the opening of the Monday afternoon session, Power Crosley, III, vice president in charge of radio, reported that plans for the 1939 line are advancing in good order.

UNVEILS NEW MODELS

Mr. D'Olive returned to the stage to present the 1938 Shelvador line. In a discussion preceding the unveiling of new models, Mr. D'Olive said that, in his experience in the industry, he had discovered two fundamental truths:

1. The biggest stumbling block, to the manufacturer, is a lack of caution.

2. With this problem solved, the product itself must make sense, both to the dealer and to the prospective buyer.

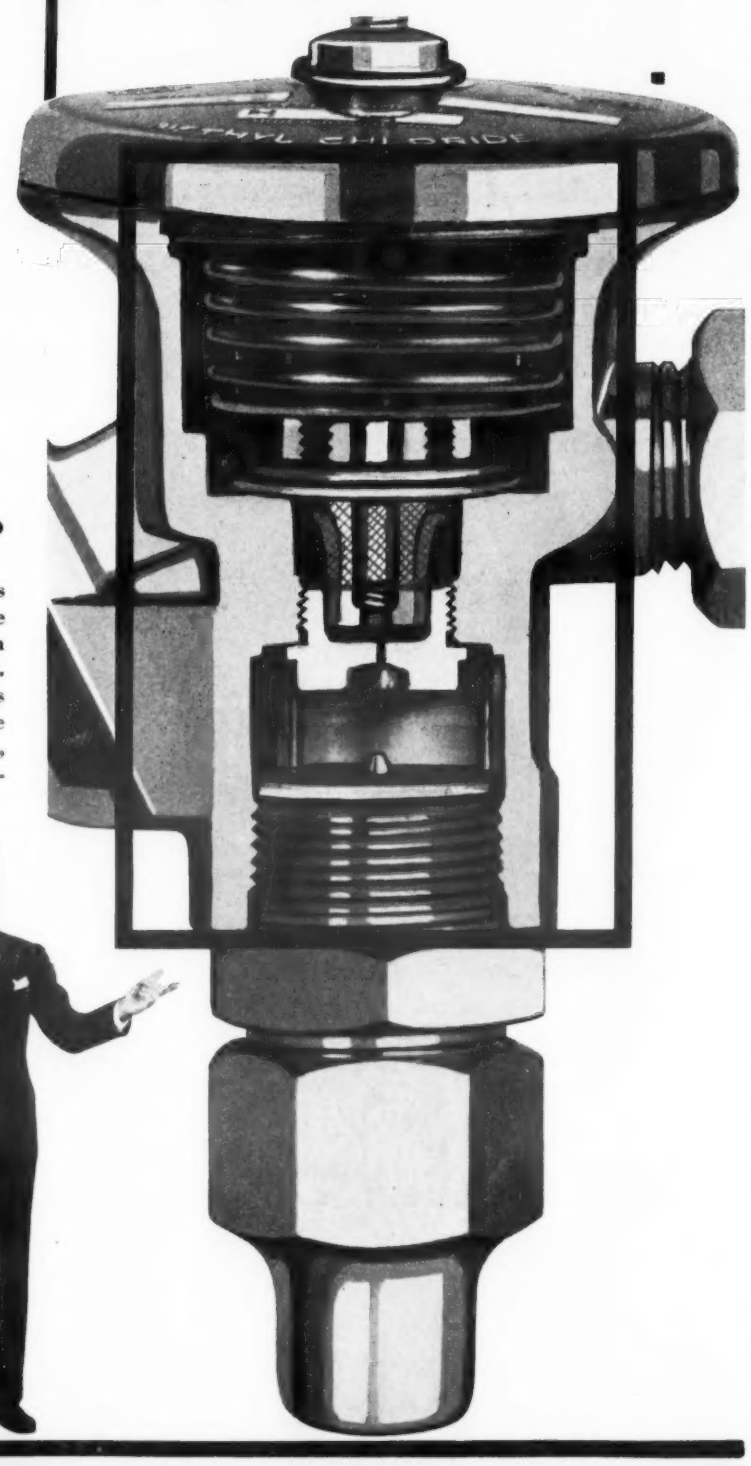
First thing that must be correct, he added, is outward appearance.

(*Concluded on Page 3, Column 1*)

'Baby' in Crosley Line

Model KB5-30 is a Shelvador model especially suitable for apartment house installations.

. . leak proof . . .



Non-porous

Brass Forged Bodies . . . .

Engineers will understand the precautions against Leakage and "Charge" Loss when we say that Brass FORGED Bodies are used on all A-P Thermostatic Expansion Valves. Non-porous, of unequalled density, Brass Forgings will safely withstand the extreme Tests against Leakage given all A-P Valves, particularly the tremendous 400-lb. Air pressure used in all tests.

Every A-P Expansion Valve in factory tests and inspection must undergo far more stress and strain than it will ever receive in actual Refrigeration or Air Conditioning installations. That's why you may be certain that A-P Expansion Valves will never "let you down" when your reputation and profit depends upon a successful installation. And thereby lies the A-P Popularity.

A-P THERMOSTATIC EXPANSION VALVE

This cross section of the Model 205 Expansion Valve illustrates the thick Forged Brass Body and the important Mechanical Lock,—two exclusive A-P features providing positive protection against Leakage and "Charge" Loss.

PROGRESSIVE JOBBERS EVERYWHERE STOCK A-P CONTROLS

AUTOMATIC PRODUCTS COMPANY
2450 NORTH THIRTY — SECOND STREET
MILWAUKEE WISCONSIN

Key Specifications of 1938 Crosley Models

Model No.	Capacity Cu. Ft.	Shelf Area Sq. Ft.	No. of Shelves	No. of Ice Trays	No. of Cubes	Lbs. of Ice	—Exterior Dimensions— (Inches) Height	Width	Depth
KL5-43	4.3	9.9	5	3	70	6.0	56⅝	23¾	26⅝
KL5-50	5.03	12.62	5	3	70	9.0	56¾	27	26⅝
KL5-61	6.1	15.8	5	6	140	11.5	58⅝	29⅝	28⅝
KL5-71	7.1	16.77	5	6	140	11.5	58⅞	32¾	28⅝
KB5-30	3.00	6.92	3	2	42	3.0	36	23⅝	25
KB5-31	3.16	7.24	3	2	63	5.0	46⅜	23⅝	27⅛
KB5-36	3.6	8.07	3	3	77	6.0	51⅛	23¾	24⅝
KB5-43	4.3	8.33	3	3	77	6.0	54	23¾	24⅝
KB5-50	5.07	11.98	4	3	77	9.0	56½	27	24⅝
KB5-60	6.0	14.43	4	6	161	12.5	58½	30⅝	25⅛
KB5-71	7.1	16.77	5	6	161	12.5	58⅞	32¾	28⅝

Crosley Performance Will Be Basis of Sales Presentation for 1938

(*Concluded from Page 2, Column 5*)

Most people must like the looks of the refrigerator, he said—and those who don't must not be irked by it. Designed by Walter Dorwin Teague, the 1938 Crosley units pass the appearance test, he concluded.

Much retooling was necessary in making up the 1938 line, Mr. D'Olive emphasized. He had unveiled boards on which were shown the parts retooled in making up the new models.

Calling attention to the stainless steel breaker strips in the Deluxe line. Mr. D'Olive stressed their importance, both in adding to interior cabinet appearance, and in being made of something that has favorable public attention at the present time.

The Shelvador, Mr. D'Olive said, taught the industry the value of "gadgets"—it "makes sense" to the prospective buyer.

DEMONSTRATES FEATURES

Emphasizing that the 1938 Crosley line contains features that the salesman "can get his teeth into," Mr. D'Olive next demonstrated the Speede-Cube tray by showing how even slight women might easily operate it. This, he pointed out, is a feature which is most easy to demonstrate.

Next he called attention to the thermometer on the evaporator door, which, because of its construction in the door, gives a true interior cabinet reading, he said; the tilting and sliding shelves, which he said add to the flexibility of interior food arrangement; the Storadrawer, the illuminated cold control dial, removable upper evaporator shelf, double-depth tray, and the ice tray loosener.

Difference between Standard and Deluxe models, he pointed out, is that the former do not have the Storadrawer, have regular instead of stainless steel breaker strips, and have but one Speede-Cube tray.

USE 'PERFORMANCE STORY'

He urged distributors to build up the "performance story" of the 1938 line to their dealers and salesmen. Compressor construction, he said, gives the unit an I.M.E. rating from 145 to 150 lbs. of ice per 24 hours. This extra capacity, he said, means economical operation, longer life.

The "Crosley Proving Ground," which distributors were invited to inspect at the close of the day's sessions, was set up to prove the quality construction of Crosley products, Mr. D'Olive pointed out. He said the company hoped to make it a regular part of the conventions of the future.

'PROVING GROUND'

Tuesday, he added, distributors would see the modern final test set-up which the company had installed in its Cincinnati plant; this is still another part of the "Proving Ground" story, he declared.

The "Proving Ground" includes exhibits of all suppliers of Crosley materials, with representatives of the various companies present to tell the "quality" story back of their particular product.

Value of the "Proving Ground," said Mr. D'Olive, is that it presents the complete Crosley story in breakdown form, so that the individual salesman can get his own additional sales slants from an inspection of the various materials shown.

Outstanding in the "Proving Ground" is the "Hot as Hades" boxes with which Crosley dealers will be able to prove their claim of operating efficiency.

In the exhibit, four 6-cu. ft. units were hooked up to a single condensing unit; all were housed in separate "Hot as Hades" boxes. Temperature in the compartment housing the condensing unit was more than 100° F., and in the four others was more than 90° F.

Thermometers used to check interior compartment temperatures are immersed in oil, to give a true reading free of radiant heat effect, and a separate temperature indicator is used to show temperature of the food storage compartments. In the "Proving Ground" display, all the units showed interior cabinet temperatures between 45 and 47° F.

Only one of the "Hot as Hades" boxes will be used in the field, for dealers' showroom demonstration purposes, but the same thermometer hook-ups will be used to show both inside-the-test-compartment and interior food compartment temperatures.

This dramatic demonstration is expected to be of great assistance to dealers in putting across the "performance" and "efficiency" angles of the 1938 Crosley story.

ADVERTISING PLANS

Mr. Berger closed the business session proper with a discussion of 1938 advertising plans.

After showing distributors that sales promotion materials for 1938 are already on hand for distribution, he went on to reveal the complete line of sales helps on the refrigerator and range lines, including broadsides, mailing pieces, envelope stuffers, sales manuals, and full-line circulars.

Two animated window displays, stressing the Shelvador feature, also are available on the refrigerator line. The "Radio Top" feature also is ready, Mr. Berger said.

National advertising on the 1938 line will break in the Saturday Evening Post early in April, with a double-truck color spread. As in the past, the small advertisements in many national publications, featuring the Shelvador, will be continued.

Newspaper advertising will break in March in newspapers in 97 large cities, with a combined circulation of about 13 millions, and covering an area containing 37 million people. This large-city advertising will be run over the signature of key dealers.

The campaign will continue through April and May, opening with large space and gradually dwindling down at each month end.

Advertising is being focused in territories in which the most business is being done—where, the company feels, dealers most want to see advertising. Copy will feature the Shelvador as "The Greatest Story Ever Told," and will tie-in with local dealer efforts. Readers will be urged to "Insist on a Demonstration."

Kelvinator Offers $8,000 To Members of Trade for Best Letters on '38 Unit

DETROIT—A "What do you think about the new Kelvinator?" contest with cash awards, participation in which will be limited to members of the electrical appliance industry rather than the consuming public, will be used to stir up interest among the trade in Kelvinator's 1938 line of electric refrigerators, according to Sam C. Mitchell, director of advertising and sales promotion for Kelvinator division, Nash-Kelvinator Corp.

The company has invited everyone in the appliance industry, through nation-wide trade paper advertising, to see the new Kelvinator household electric refrigerator as soon as it is shown, and then to write 50 words telling what he thinks about it.

A prize of $5,000 will be awarded to the person submitting the best comment, and $3,000 more will be split up among writers of the seven next best letters.

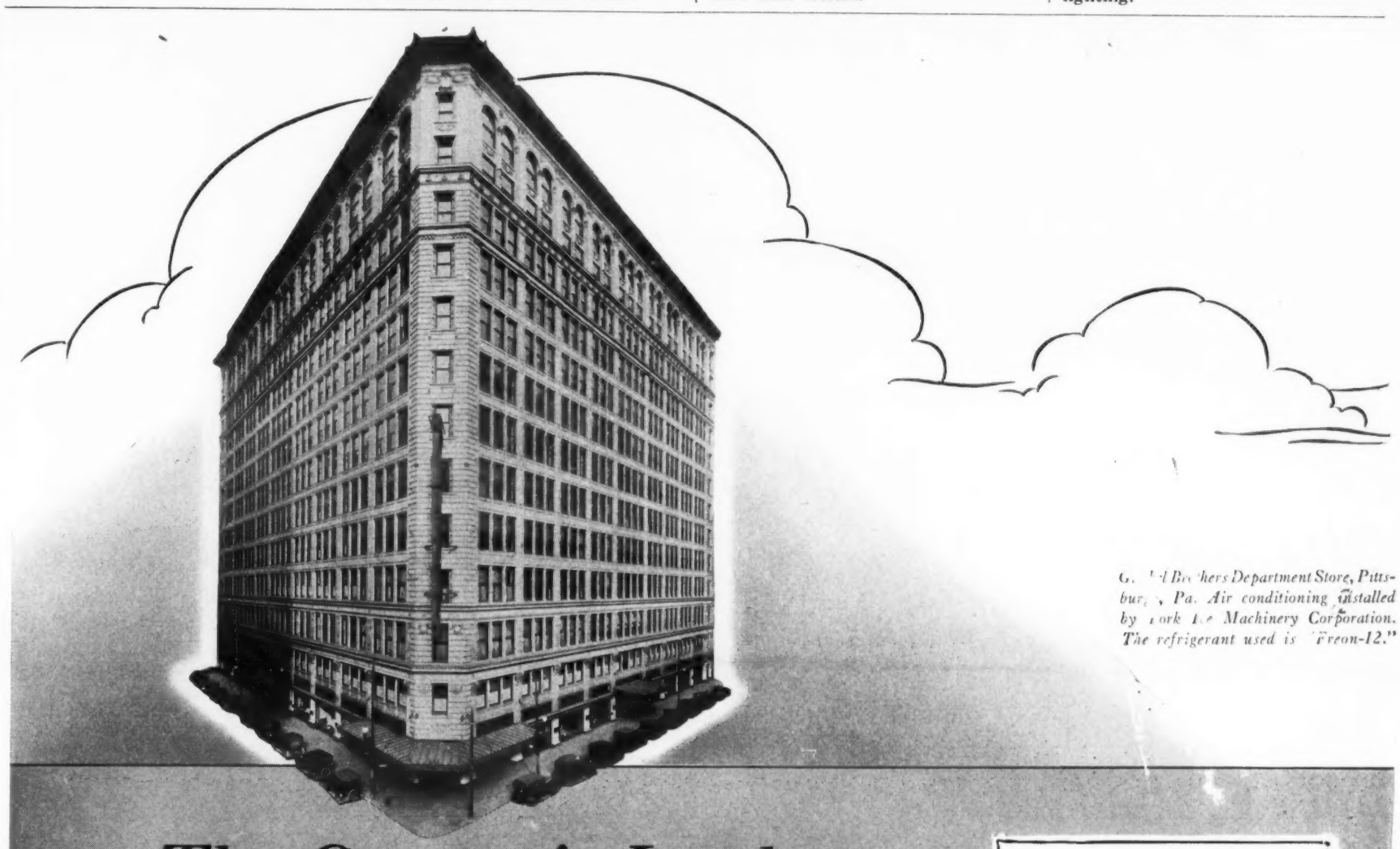
4 Electric Kitchens Installed in Texas

SAN ANTONIO, Tex.—Four modern all-electric kitchens have been completed and four others are being constructed by the South Texas department of the San Antonio Public Service Co.

The kitchens have all been designed around three 'centers'—range, refrigerator, and sink—with the equipment lining two adjoining walls of the room. Uniform height of top surfaces, excluding the refrigerator, is three feet.

Included in the kitchen installed for A. M. Biedenharn in the Kendall district are a refrigerator, range, dishwasher, and water heater. O. L. Biedenharn, in the same district, has in his kitchen similar equipment plus a disposal and exhaust fan.

A 90-watt exhaust fan is installed above the window in the all-electric kitchen of H. A. Ulbricht at Seguin. The kitchen also includes a refrigerator, range, water heater, dishwasher, disposal, clock, and semi-indirect lighting.



G. [illegible] Brothers Department Store, Pittsburgh, Pa. Air conditioning installed by York Ice Machinery Corporation. The refrigerant used is "Freon-12."

The Country's Leading
AIR CONDITIONED RETAIL STORES
use **FREON** *refrigerants*
REG. U. S. PAT. OFF.

HERE ARE JUST A FEW OF THE LEADING RETAIL STORES USING "FREON" REFRIGERANTS IN THEIR AIR CONDITIONING SYSTEMS:

Hale Bros.
San Francisco—Westinghouse
Powell, Inc. Dept. Store
Chicago, Ill.—Frigidaire
Abraham & Straus
Brooklyn, N. Y.—York
Goldblatt Dept. Store
Chicago, Ill.—G-E
F. W. Woolworth Co.
Philadelphia, Pa.—Carrier
The Fashion
Houston, Tex.—Kelvinator
Bloomingdale Bros.
New York City—York
Adeline Shops, Inc.
St. Louis, Mo.—Frigidaire
B. F. Dewees, Inc.
Philadelphia, Pa.—G-E
Miller-Wohl Dept. Store
Kansas City—Westinghouse
Wanamaker's Dept. Store
New York City—York
Jackson-Grave, Inc.
Minneapolis—Frigidaire
Woolworth Store, Broadway and 44th St., N. Y. C.—Carbondale
Alexander's Dept. Store
Bronx, N. Y.—G-E
The Boston Store
Phoenix, Ariz.—Westinghouse
J. C. Penney & Co.
St. Joseph, Mo.—Frick
Rich's Shoe Store
Washington, D. C.—Carrier
Mark Cross Luggage Store
New York City—Frigidaire

LEADING retail stores throughout the country have shown a significant preference for "Freon"* fluorine refrigerants in their air conditioning systems.

"Freon" refrigerants meet every requirement for satisfactory service under the most difficult conditions. They are non-toxic, non-flammable, non-explosive. They are odorless when mixed with air up to 20% by volume. They do not harm foods, fabrics or furs.

"Freon" refrigerants meet all the specifications set by the Underwriters' Laboratories of Chicago in their recent report "Standard for Commercial Refrigerating Systems" (Subject No. 207). They have been tested by the U.S. Bureau of Mines. 99½% of all mechanically cooled railroad trains use "Freon" refrigerants. They are used in ships, in mines deep underground, in hotels, restaurants, department stores, homes, schools, hospitals, offices, factories—in every type of installation, large or small.

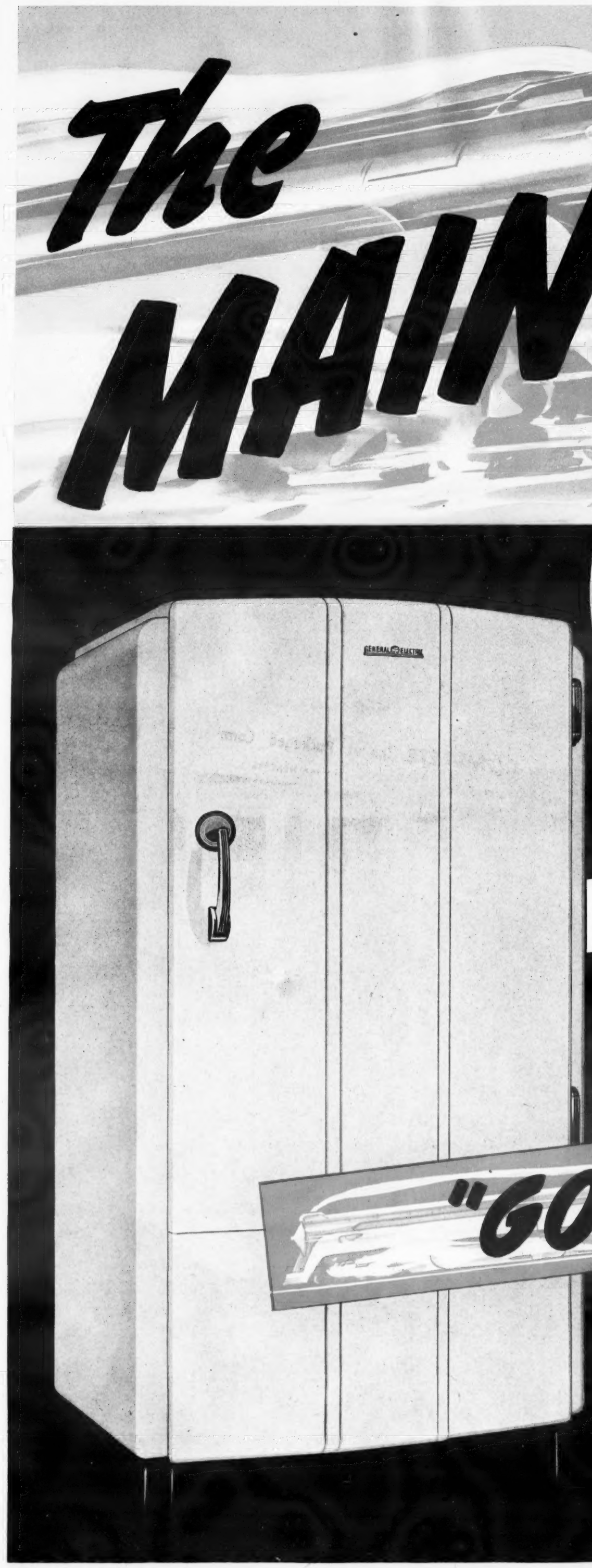
Be sure to specify "Freon" refrigerants when you install your cooling system.

*"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.

FREON
REG. U. S. PAT. OFF.
safe refrigerants

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

The MAINLINE



A COMPLETE Line of Electric Household Appliances!

G-E TRIPLE-THRIFT REFRIGERATORS

G-E RANGES WITH HI-SPEED CALROD

"GO TO TOWN"

ONE-A-MINUTE!

● The General Electric *Triple-Thrift* Refrigerator set competition back on its heels in 1937. *It was a G-E year!* America bought this first choice of millions at the rate of one-a-minute. And would have bought more had they been available. General Electric now offers even greater values for 1938. Factory capacity has been increased 50%. *It is going to be another G-E year!*

FOR 1938!

IT'S ANOTHER G-E YEAR

● Take the MAINLINE and go places in '38! It's the most direct route to bigger NET profits. ● General Electric, the recognized world leader in all things electric, makes available to you a *complete* line, identified by a trade-mark that is the accepted hall-mark of quality and is familiar to practically every wired home in America. ● *Get Aboard the "Big Train"!* It's not an "excursion special" but a through train that will take you where you want to go. No detours! No stop-overs! ● G-E products are years ahead—while others experimented G-E perfected! General Electric Company, Appliance Division, Nela Park, Cleveland, Ohio.

COMPLETE All-Electric Kitchens. COMPLETE All-Electric Laundries. COMPLETE Line of "Packaged" Commercial Refrigeration.

G-E ELECTRIC SINKS

G-E DISHWASHERS

G-E GARBAGE DISPOSALLS

G-E WATER HEATERS

G-E WASHERS

ON THE MAINLINE

G-E FLATPLATE AND ROTARY IRONERS

G-E BEVERAGE COOLERS

G-E WATER COOLERS

G-E MILK COOLERS

EVERY product proved by performance, tested by time! New models! New features! Better products, better prices, better promotion!

GENERAL ELECTRIC

SPECIALTY SELLING IDEAS

Selling in Prospect's Home Plus Liberal Reward for Leads Net Department Store Salesman $150 Weekly in Commissions

KANSAS CITY, Mo.—By giving his unusual sales talks right in prospects' homes, and by putting in many 16-hour days, Al Bell, star salesman of Mace's department store here, earns himself weekly commissions which have averaged close to $150.

The energetic Mr. Bell considers floor selling in the store a waste of time, and gets into prospects' homes to do his selling. To find prospects, he uses several sure-fire methods.

For one thing, he works in close cooperation with the service men of Mace's who bring in refrigerator compressors for overhauls, securing from them information regarding the apparent financial status of the homes and the preferences of the prospects as to make, model, and size of refrigerator.

Bell pays the service men 1%, and Mace's adds 2% for all sales made through their information.

Another of Bell's prospect-finding methods is the placing of an advertisement in the classified section of the Kansas City Star, such as, for example, "Want responsible party to pay off balance due on 1936, 8 cu. ft. refrigerator. Free equity. Call MO 3-6295."

The telephone number given is that of a professional answering service, but whoever responds to the advertisement assumes that it is a private party. Bell gets the names and addresses of those who call about the advertisement, goes to work on them, and sells one out of three a new refrigerator.

Bell also uses rental advertising to attract prospects. He places an advertisement in the paper stating that a refrigerator may be purchased or rented for 10 cents a day, and giving a telephone number. To prospects who respond Bell explains that the offer is made on a basis of $21 cash payment, $3.50 a month for four months' service, and $3.50 drayage each way.

Bell then goes out to the home, convinces the prospect that with such liberal terms it is foolish to rent a refrigerator, and comes away with a signed order for a new unit. Only once has he had to make good on his rental offer, and that was to a man who said that, since he was going to be in town for only four months, the rental plan suited him.

Other leads are opened up to Mr. Bell because of his generous payments for good tips. He gives $2 for all sales made through tips, and boosts the ante to $5 for all sales amounting to more than $200. Mace's also ties in by giving a $2 credit coupon for every productive tip. About 75% of the leads thus obtained through former customers are turned into closed sales by Mr. Bell.

Still another method used by Mr. Bell to increase his sales is the salvaging of prospects who, for various reasons, have been turned down by credit companies. First investigating to make sure that the prospects really are sound risks, but are just temporarily handicapped by illness or some emergency, Bell goes to their homes, explains Mace's three-year payment plan, and closes the sale.

When he comes up against prospects who balk at paying during the winter months when they don't use their refrigerators so much and have other expenses to meet, Bell offers to permit them to pay nothing at all from October through March if they'll agree to make up this moratorium by paying bigger instalments during the summer.

Bell's selling equipment, outside of his sales talk, consists of a portfolio of photographs of the various models of refrigerators which he sells, showing exterior and interior views.

Among tokens of recognition presented to Mr. Bell is a diamond ring given him by Norge division, Borg-Warner Corp., in 1934 for selling the most Norge refrigerators that year in Kansas City. He won a trip to the Grunow factory in Chicago in 1935, and in 1936 earned a $150 bonus for selling "stickers."

Kansas Dealer Finds That Trailer Aids Sales of Gas & Electric Appliances

LAWRENCE, Kan.—Taking the product to the customer by means of an auto trailer has proven a successful way of merchandising appliances for Central Plumbing Co., appliance dealer here, according to Everett Christensen, proprietor.

The door of Mr. Christensen's trailer is a replica of a Servel refrigerator. The interior is equipped as a demonstration room and contains several Servel gas and kerosene refrigerators, a Chambers gas range, and a Sparton electric refrigerator.

Central Plumbing Co. has outlets in six small towns in Douglas county in addition to its salesroom here, and the company caters to rural as well as city trade.

The trailer makes periodical trips to all towns in which the company has outlets. The heads of these local outlets are notified in advance of the trailer's arrival and these agents then see to it that the event is publicized.

In developing rural sales, the company first finds a family which is interested in buying a kerosene refrigerator and arranges a demonstration at that family's farm. The farmer is then asked to invite some of his friends and neighbors to the demonstration. When the trailer arrives, the salesman's first move is to present an interesting radio program. Then the refrigerator is demonstrated, questions are answered, and explanatory literature is passed out.

Mr. Christensen has found that farmers are just as anxious as city dwellers to "keep up with the Joneses," and that once a sale is made in any particular area other sales in the same territory almost invariably follow.

Once a sale is made, the trailer is used to deliver the refrigerator to the purchaser's home.

G-E Dealer Believes Outlet Should Handle Only One Line of Refrigerators

MONTGOMERY, Ala. — Handle only one line, and as few models in that line as you can. That advice to specialty dealers comes from L. S. Henley, president of the Henley Appliance Co., General Electric dealer here. If he had his way about it, he would like to have only three sizes of electric refrigerators—small, medium, and large. This would vastly simplify selling, in his opinion.

Mr. Henley finds that salesmen confuse themselves trying to remember the good points of two or three makes of refrigerators, but the confusion is nothing compared to the "picklement" caused the customer. He figures that his salesmen do a housewife a good turn by convincing her that their brand is "best," especially where her mind is muddled by trying to combine the good features of a half dozen different makes.

From the store's standpoint, Mr. Henley is convinced one line is best. The stock investment in models on the floor is less, bookkeeping lighter, and the service set-up simpler.

The dealer who aspires only to be a "caretaker" for a showroom may possibly choose to carry several lines. It may be best for department stores or other large retail centers. But Mr. Henley just can't see it as far as outside selling by a specialty store is concerned.

The salesman who goes out trying to sell two or three different lines is his own best competitor, says Mr. Henley. He leans which ever way the customer leans, pursues a "scatteration" policy, which, like a "Mother Hubbard," covers everything and touches nothing in particular. The customer may say she wants to be the judge, but she really doesn't. She wants somebody to tell her what to buy, he believes.

In line with this policy, Mr. Henley holds classes each week for his salesmen, schooling them in all there is know about the General Electric refrigerator. He also handles G-E radios, washers, sweepers, and air conditioning. In fact, his concern is pretty well indentified as the city's G-E dealer.

Some dealers may differ with Mr. Henley and contend they can get more volume with two or three different brands. But Mr. Henley asks them just to consider the mail order houses and chain stores. As a rule, he ponts out, they handle only one brand—and it may not be so well known, at that.

While concentrating on a single line, Mr. Henley believes in intensive promotion and persistent outside selling. When he gets in a new shipment of refrigerators, he uncrates them right out front, where everybody can see the operations.

Another idea of his was to have an all-electric kitchen in his place of business—not in a stationary position, but mounted on rollers so that it can be moved around as desired. He can have it up front in the window if he likes, or he can roll it back to his auditorium for a cooking school.

Ready to capitalize on the new residential building boom, his concern is now carefully cultivating architects and builders of the city. He had them in recently for dinner in his auditorium. His salesmen call on them regularly, and find them a splendid source for the sale of complete electric kitchens.

LOOKING AT

Bonderizing

THROUGH A STEEL WINDOW

THE constant improvement of Parker Processes is extending their sphere of usefulness.

The recent adaptation of Bonderizing to the finishing of steel windows for the first time indicates the widening scope of this paint-holding and rust-inhibiting process. With this modern process, better paint adhesion and adequate protection from rust is provided with greater speed and economy.

Automobile bodies and other parts, as well as washing Machines, Refrigerator and Air Conditioning Equipment, Office Machines and Electrical Devices are only a few of the scores of products on which greater assurance of finish permanence is provided by Bonderizing.

The manufacturer with a paint finishing problem should investigate the new effectiveness of Bonderizing on iron, steel or zinc surfaces.

PARKER RUST-PROOF COMPANY
2197 E. Milwaukee Ave. • Detroit, Mich.

Ask for these Books:
For more than 22 years, this company has devoted its entire time, talent and energy to the improvement of rust-proofing methods. New books describing the Parker Processes are available to manufacturers and technical men. Send for your copies.

PARKER Processes CONQUER RUST
BONDERIZING • PARKERIZING

Demonstration Kit for Frigidaire Ranges Is Prepared

DAYTON — Including a demonstration kit, display kit, talking slide film, electric sign, and a wide variety of printed matter, a collection of selling materials available to all dealers and salesmen handling the new 1938 Frigidaire electric range has been produced by Frigidaire division, General Motors Sales Corp.

Demonstration kit is composed of a glass "speed-heat" unit, a cross section of heating ring, and a casserole set. A demonstrator back-ground display, a broiler test card, and announcement streamers comprise the display kit.

Printed material includes various folders, a selling book, two users instruction books, three sales training manuals, an electric range survey report blank, specification sheets, and an announcement invitation.

To promote further its new ranges, Frigidaire is making available to dealers formats of newspaper advertisements which tie in with the national advertising campaign, and scripts for radio spot announcements. The factory sales department also has prepared window and store displays for its dealers, truck banners, direct mail pieces, publicity stories for local newspapers, come-in gifts, and special Christmas advertisements.

Servel Dealer Furnishes Butter Cartons to Farmers

GONZALES, Tex.—To help farmers pay for their refrigerators, and at the same time advertise his dealership, Carl Mahler, Servel Electrolux dealer here, supplies his farmer-customers with cartons in which they package their butter.

Every carton bears the label "Electrolux Club—Always Fresh—Country Butter," and has on it Mr. Mahler's name and the farm name.

Mr. Mahler has arranged with the manager of a chain store to buy for resale all the butter produced by the farmers whom he is sponsoring. The latter's extra profits are applied to their refrigerator bills. Mr. Mahler's sales of kerosene Servel Electrolux refrigerators this year are four times greater than those he made last year.

Dealer Offers Bonus on Christmas Sales

SHREVEPORT, La. — To increase sales during the Christmas season, Johnson Furniture Co., local household appliance and furniture dealer, is offering its salesmen an extra premium of $1 per cu. ft. for each refrigerator they sell between Nov. 1 and Dec. 24. This Christmas check, which is in addition to the regular commission, is given the salesmen at the time they make the sales, but is not payable until Christmas eve.

AIR CONDITIONING

'Packaged' Oil & Gas Burners Introduced By Westinghouse as Company Enters Year-Around Air-Conditioning Field

MANSFIELD — New mechanical and design features characterize the line of compact "packaged" oil and gas-fired units with which Westinghouse recently announced its entry into the residential year-around air-conditioning market.

Occupying a minimum of floor space, the units are nevertheless said to be designed with capacity enough for large residences; styling and designing of the units has been done with an eye toward harmony with other furniture in finished basements.

The systems are designed for year-around service; however, the summer air-conditioning equipment may be added whenever desired, after the winter system has been installed. Winter system is complete with automatic burner, providing uniform heating for the entire house.

'V' ANGLE FILTERS

A blower is used to circulate air for both winter heating and summer cooling. Air in this system is cleaned by "V" angle filters, constructed so as to minimize air motion resistance, yet trap dirt, soot, pollen, and other foreign matter. Humidification is accomplished by either drip or spray type, according to requirements.

For summer cooling, the Westinghouse condensing unit is provided, together with matched cooling and dehumidifying coils.

Four models are in the gas-fired series, with capacities at register ranging from 107,000 B.t.u. to 267,750 B.t.u. per hour. Burner compartment housing the heating element and burners has over-all dimensions of 82 inches in width, 76⅜ inches in depth, and 58 inches in height.

RADIATOR CONSTRUCTION

Radiator is constructed of No. 12 gauge steel. Drum of the heating element is 34 inches in diameter and is made from boiler plate steel. As proof against leakage in operation, seams are welded after being riveted. High efficiency is obtained in this series, it is claimed, from ample heating surfaces, without restricted gas passages and unusually extended fire travel.

Blower compartment is located at the rear of the burner compartment, where it is out of the way. Being 29 inches in depth, it brings the over-all depth dimension of the unit to 105⅜ inches.

LARGE GAS UNIT

In the large model of the gas-fired unit there are five burners, two blowers, and four filters. The blower revolves at 334 r.p.m. at the above rating, driven by a ½-hp. motor. The filters measure 16 x 25 inches.

Summer air-conditioning compartment has the identical measurements of the blower compartment, and is attached to the heating compartment at the side. The compartment houses the condenser assembly.

When complete with all compartments assembled, dimensions for the unit are 168 inches wide, 105⅜ inches deep, and 58 inches high.

The Westinghouse oil-fired home air-conditioning unit is similar to the gas-fired except that the blower compartment, like the cooling compartment, is mounted on the sides of the heating compartment. Over-all dimensions for the large oil-fired model are 58½ inches high, 57⅝ inches deep, and 124¾ inches wide. All the models have one blower and three V-6x25 filters. Blower fan revolves at 380 r.p.m. at the above rating, and is driven by a ¾-hp. motor.

Cabinets for both the air and the gas-fired series are constructed of 20-gauge cold rolled furniture stock. Rounded corners and glossy enamel finish make their appearance attractive.

An automatic oil burner, also announced by Westinghouse, is of the gun type, and is mounted in the front vestibule of the unit. This element is also made available as a conversion burner, for converting already existing heating plants. It is said to be quickly and easily installed.

Design of the new burner embodies a blower to whirl the air in and mix it with the oil, then blow it through the atomizing nozzle, and an air diffuser for shaping the flame to suit the particular firebox, controlling the application of the flame for the most effective heating.

A transformer provides the necessary step-up in voltage for instantaneous ignition of fuel; electrode connector permits use of ordinary electric outlet.

National Survey Shows $7,500 Homes Market For Conditioning

EAST PITTSBURGH—Completion of a nation-wide survey intended to show the potential market for residential air-conditioning equipment has been announced by Westinghouse Electric & Mfg. Co. The survey was conducted by W. H. Stangle, assistant to the manager of the refrigeration and air-conditioning department.

The report classified all homes into four fundamental price brackets, each having a definite relation to the heating or air conditioning permissible within the economic purchasing power of that bracket. These classifications follow:

Cost of Home	Type of System Permissible
Under $3,000	Simplest heating
$3,000 to $5,000	Simple heating
$5,000 to $7,500	Winter air conditioning
$7,500 and up	Year-around conditioning

These classifications were determined by using the 25,000,000 American non-farm families as a basic factor, and using their incomes, purchasing power, and home ownership as indices.

About 9,000,000 families, according to the survey, own their own homes; 62% of the single family homes are in need of some repair; 16% of these homes require new heating equipment.

The report also showed that about 42% of existing homes still use stoves for heating, and 31% use central warm air systems. The remaining homes use either central steam or hot water.

The present new-home market outlook is entirely different, however, for fully 70% of the central systems now being installed in new homes are of the direct-fired warm air type.

In covering the one-family new-home market, figures obtained from annual building averages over the past 17 years were used. These figures show a high of 546,000 new houses in 1925, a low of 41,000 in 1934, and an average of about 280,000 per year. Of the 280,000 homes which, according to this average, will be constructed this year, more than 82% will be in the $3,000 to $10,000 bracket, or that bracket which provides the greatest market for heating and air conditioning, the survey indicated.

Walsh to Manage York Heating Division

YORK, Pa. — Edward Robert Walsh, Jr., former general sales manager of the automatic heat and air-conditioning division of Herman Nelson Corp., has been appointed head of the newly organized automatic heating division of York Ice Machinery Corp., according to an announcement by S. E. Lauer, vice president and general manager.

Mr. Walsh was president of Tyrrell Co. of Boston in 1925, leaving this firm of consulting engineers and contractors to become eastern New England manager of Gilbert & Barker Mfg. Co. in 1931.

Smoke Nuisance Blamed For Spread of Disease

HOBOKEN, N. J.—Smoke nuisance in large cities was blamed as a contributing factor in the spread of disease by H. C. Murphy, chairman of the American Society of Heating and Ventilating Engineers' committee on air cleaning, when he spoke on "Air Pollution and Its Relation to Community Health" before the Hudson County (N. J.) Smoke Abatement Association, at Stevens Institute of Technology.

Mr. Murphy explained that air-borne bacteria was often held in suspension on particles of smoke and dust, and described recent research at Harvard School of Public Health which indicates that germ-droplets ejected when people cough, sneeze, or talk, remain in suspension for days. He also declared that the latest study of air-borne bacteria was leading scientists to think that certain respiratory disease germs were becoming adapted to this means of transmission.

He traced the relationship between atmospheric pollution and decreased sunlight in large industrial centers, citing 10 large cities which, in a period of 10 years, have suffered an average decrease in sunshine of from 6 to 17% during the winter months, according to U. S. Weather Bureau reports. The five American cities reporting the largest average number of dust particles per cubic foot of air are: St. Louis, Cincinnati, Pittsburgh, Detroit, and Chicago.

Warning that winter health conditions in our major cities are steadily growing worse, Mr. Murphy condemned the disregard in which most smoke abatement legislation is held.

SHELL AND TUBE CONDENSERS OF LARGE CAPACITY CONTRIBUTE TO BRUNNER'S OVER-ALL EFFICIENCY

Model W-1500
CONDENSING UNIT
Water Cooled

Brunner engineering has a reputation for effectively "gearing" design to service conditions. The Shell and Tube condensers of the large water-cooled Brunner units (7½ H.P. and over) illustrate this point. For in the larger installations, necessarily subjected to more severe demands, extra precautions must be taken to insure long range dependability... Brunner Shell and Tube condensers offer greater efficiency in this type of service; and due to the low pressure drop of both refrigerant and water (together with oversize connections) power consumption is appreciably lowered. Shell and Tube condensers are also easier to clean . . . are more attractive in appearance . . . and due to their extra weight and lower center of gravity, vibration is reduced to a minimum. Greater storage capacity for the refrigerant is also afforded, should it be necessary to pump down the system . . . But why not let us explain further? Send for the new Brunner Refrigerating Equipment Catalog describing Brunner units —air and water cooled—for installations ranging from 100 lbs. to 15 tons of refrigeration. Brunner Manufacturing Co., Utica, N. Y., U. S. A.

BRUNNER

BUILDS FOR *Greater* DEPENDABILITY

Advertising Code Is Revised by Dealers In Cleveland

(Concluded from Page 1, Column 5)

cooperate in the outlined program of advertising censorship.

Among the small group of retailers who met with Better Business Bureau officials were representatives of the Retail Merchants Board and the Cleveland Retail Appliance Dealers Association.

A list of changes made in the proposed code follow:

In the section forbidding mention of definite prices for trade-ins, the retailers also recommended abolition of specific percentages for trade-ins. General claims such as "the best deal in town" also were outlawed.

The rule banning advertising of "no carrying charges" was amended to specify that if a budget plan is mentioned, then some such statement as "slightly higher on terms" also must be used.

The section restricting price comparisons to a former established price of the article in question was tightened to allow only comparison with the last established price.

The paragraph demanding that claims of savings be supported with specific facts was scrapped completely, because it was argued that it exercised a severe handicap on certain stores and publications which for years have assiduously avoided price comparisons.

The ban on "free" premiums evoked considerable discussion, and it was finally decided that for the time being the Better Business Bureau should be allowed some discretionary powers in determining violations of these general rules.

Left unchanged was the ban on false and misleading advertising copy; the rule outlawing so-called "free" goods; the rule calling for clear details as to name, model number, and year of appliances offered for sale; the ban on continued underselling claims; and the final rule forbidding violations of the Ohio Fair Trade Act.

Vacuum cleaners were not covered by the code as originally drafted, but a committee was appointed to investigate the possibility of amending the articles to include this appliance.

As only a comparatively few retailers attended this meeting, Mr. Farrar announced that another and larger meeting soon would be held to approve the amended regulations.

'Believe It or Not'—Ripley at Norge Meeting

(1) Three outstanding personalities get together. Paul B. Zimmerman, newly appointed vice president in charge of all Norge sales looks on as Robert L. "Believe-It-Or-Not" Ripley, who spoke at the recent Norge distributor banquet, greets John H. Knapp, now assistant to the president. (2) C. D. Donaven, vice president in charge of manufacturing (left), and Howard E. Blood, president of the Norge division of Borg-Warner Corp., and executive vice president of Borg-Warner Corp. (3) Roy Gifford, director of Borg-Warner Export Corp., in charge of Norge foreign market activities; and Vice President Paul B. Zimmerman of the Norge division discuss 1938 plans with two of the distributors from abroad who attended the Norge convention. Representatives from Canada, Peru, Guatemala, Ecuador, Sweden, Venezuela, Holland, Panama, Hawaii, Mexico, Brazil, Norway, and other countries were in attendance. (4) C. B. Peck, president of Charleston Electric, Norge distributor; John H. Knapp, assistant to the president; and E. R. Bridge, manager of the Norge washer sales.

Federal Trade Commission Will Hold Radio Fair Trade Code Hearing Dec. 7

WASHINGTON, D. C.—A tentative code of fair trade practices for the radio industry has been made public by the Federal Trade Commission, and the commission has set Dec. 7 as the date for an open hearing on the proposed regulations.

These suggested rules and restrictions were presented to the FTC by the Radio Manufacturers' Association in March, 1936. About a month later they were made the subject of a lengthy hearing, and then were taken under advisement by the commission.

Purpose of the scheduled hearing is to afford anyone interested in or affected by these proposed fair trade regulations an opportunity to voice his opinions to the commission. Applications for permission to speak at the hearing must be written or telegraphed to the FTC office previous to the date of the hearing. Copies of the proposed regulations may be obtained by communicating with the commission's office before Dec. 7.

The suggested code aims particularly at the maintenance of retail prices and at elimination of product misrepresentation.

The code would forbid any member of the industry from offering to multiple-brand dealers or their salesmen "spiffs," "push money," or bonuses of any type as an inducement to promote the sale of any one brand of radio over competing products which they handle.

The rules also strike out at the following forms of misrepresentation: false or deceptive marking or labeling of any radio receivers or their component parts; unrestricted use of such terms as "all-wave" and "world-wave"; unwarranted use of names of persons or organizations prominent in the radio industry; altering, effacing, or removing of name plates or serial numbers; the imitation or simulation of trade names, trade marks, or labels; misrepresentation of the actual tube capacity of radio sets.

'Mystic Oven' Leads Features on Crosley Line of Gas Ranges

CINCINNATI—Chief appeal of the Crosley "Mystic Oven" gas range is that a complete meal may be cooked in the oven all at the same time, according to Crosley officials.

The housewife may start her evening meal as early as 8 o'clock in the morning, and as late as 6 o'clock in the evening it will be ready to serve, if the controls have been properly set.

The "mystic oven" range is a two-oven range. The low-temperature "mystic oven" possesses a temperature variation of 150 to 250°. The high-speed oven has a temperature range of 250 to 550°.

In working with the "mystic oven" the housewife places the cooking receptacles directly on the oven bottom. The oven is constructed to maintain a predetermined amount of steam vapor that is necessary for waterless cooking.

All the food for an entire meal is placed in the oven raw. The housewife then sets the dial and turns on the gas.

In the oven burner unit heat is supplied to a cast iron plate by means of a small gas burner with an input of gas sufficient to supply the correct amount of heat necessary to maintain the desired temperature. At no time does the burner flame come in contact with the oven bottom. A vent in the rear wall is placed low to retain steam-vapor.

The "mystic oven" gas range has an "accesso top" for quick meal preparation. This consists of divided burners placed on a roomy work space which is triple insulated. The entire top is one piece and hinged, so it may easily be raised for cleaning or servicing.

In addition to the "mystic oven" the deluxe model range also has a high-speed oven which is full size, and completely insulated. Fast preheating is claimed for this oven.

The oven is lighted by means of an oven-lighting port. Top burners light at the turn of a valve, which is located on the side of the range for convenience and safety.

Dial control offers positive temperature control, and a "minute minder" located in the backguard gives warning as to when certain foods are done.

Recommended retail price of the "mystic oven" range is $144.95.

In addition to the "mystic oven" model, Crosley is offering six other gas ranges, incorporating most of the "mystic oven" features, and retailing at from $59.95 to $129.95.

Crosley Range

The "Mystic Oven" model is the top gas range in the new line introduced by Crosley.

100 Carrier Commercial Dealers Will Meet in Chicago Dec. 6-7

CHICAGO—More than 100 Carrier commercial refrigeration dealers from the corporation's central territory will meet Dec. 6 and 7 at the Merchandise Mart here to participate in Carrier Corp.'s first annual commercial refrigeration convention, according to Mark E. Mooney, district representative.

All speakers will be men who have actually engineered, sold, and installed successful commercial refrigeration jobs. Among these speakers will be: Ivan Robinson, Field & Shorb Co., Decatur, Ill.; Arthur Boot, Boot & Co., Grand Rapids, Mich.; Ray Fischer, J. Geo. Fischer & Sons, Saginaw, Mich.; H. W. Schrick, Sears & Piou, St. Louis; S. H. Ellison, Carrier Corp., Syracuse, N. Y.

In preparation for the convention, Carrier Corp. will place some of its air-conditioning equipment on display in the Merchandise Mart Dec. 2.

The commercial dealers will meet in Carrier-conditioned rooms in the Mart, which is the world's largest office building.

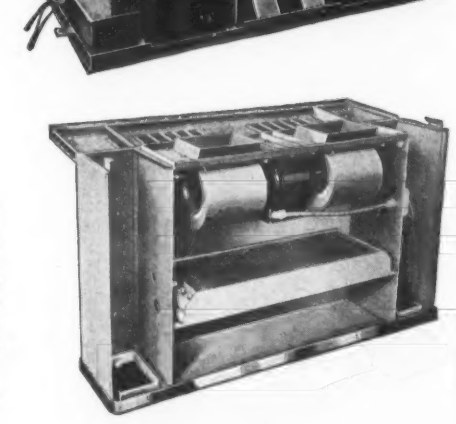
Sunbeam Factory Addition Is Nearing Completion

EVANSVILLE, Ind. — Sunbeam Electric Mfg. Co.'s new factory addition is nearing completion, according to Howard Orndorff, construction superintendent for the Tri-State Contracting Corp.

Steel work is going up for the company's new office building, for which the Rust Construction Co. has the contract.

WAGNER MOTORS *for all types of air conditioners*

"No wonder Air Conditioner Manufacturers *prefer* Wagner Motors!"



. . . . . they meet their requirements of performance and dependability

The preference for Wagner Motors for air conditioning has grown as rapidly as the knowledge of their dependability and excellent performance. No longer do modern air conditioner manufacturers overlook those important considerations in the selection of air conditioner motors that would help make their equipment give better, more dependable, more economical and more efficient service.

Progressive air conditioner manufacturers now consider these ten important requisites, which are fully provided for in the design and construction of Wagner Motors:

1 Cool Operation.
2 Minimum Servicing.
3 Minimum Vibration and Noise.
4 Good Appearance to Fit in With the Finest Surroundings.
5 Simplicity of Construction With Resultant Ease of Repair.
6 Maximum Economy Consistent With Dependable Performance.
7 Long-Lived Insulation.
8 Low Upkeep Costs.
9 Long Years of Reliable Operation.
10 Correctly Designed Starting and Operating Characteristics.

Years of experience are behind every Wagner motor. This, plus the widespread use of Wagner motors on all types of air conditioning systems — makes Wagner motors outstanding from a performance and permanence of operation viewpoint.

On your next air conditioning design or installation problem—consult Wagner. Wagner's experience will be helpful. Descriptive literature will be sent upon request.

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, U.S.A.

Motors Transformers Fans Brakes

MM136-1M

PREFERENCE FOR WAGNER MOTORS FOR AIR CONDITIONING EQUIPMENT IS STEADILY GROWING

New refrigerant valve for positive control of fractional tonnage installations. The 5/64" port will hold tight on liquid line capacities as low as 150 B.T.U. per hour.

QUIET, DEPENDABLE REFRIGERANT CONTROL

General Controls current-failure Magnetic Refrigerant Valves are full-powered and pilot-operated to insure positive instant opening against high pressures. Tight closing with the line pressure on top of the seat and full-ported to handle large capacities at a minimum pressure drop. Absolutely quiet in operation. Port sizes from 5/64" to 2".

GENERAL CONTROLS

1505 Broadway, Cleveland, Ohio
267 5th Ave., New York City, N.Y.
1370 Harrison St., San Francisco, Calif.
450 East Ohio St. . . Chicago, Ill.

DISTRIBUTOR–DEALER DOINGS

Oldest Louisville Dealer Opens New Quarters

LOUISVILLE, Ky.—The Louisville Radio & Refrigerator Sales, this city's oldest appliance dealer, celebrated its formal opening at a new location in the Strand theater building on Nov. 20. A new department gift shop has been provided in the new store under the direction of Miss L. Stemler Brown. President of the firm is Louis Abraham.

Included in the firm's line of appliances are Crosley and Electrolux refrigerators; Philco, Stromberg-Carlson, RCA-Victor and Crosley radios, and ABC and Maytag washers and ironers.

Marshall Field & Co. Named Ice-O-Matic Dealer

CHICAGO—Marshall Field & Co. has been appointed exclusive metropolitan Chicago dealer for Williams Ice-O-Matic household refrigerators, the Williams Oil-O-Matic Heating Corp. has announced.

An advertising program utilizing radio and newspaper outlets will open a pre-holiday sales drive Dec. 4. Actual selling will be confined to store traffic.

200 Dealers at Westinghouse Meeting in Springfield

SPRINGFIELD, Mass. — Presentation of the 1938 line of Westinghouse refrigerators was made here recently at a meeting and dinner attended by 200 dealers and salesmen of western Massachusetts.

Speakers included J. Edward Hall, division manager of Westinghouse for New England; J. E. Foley, merchandising supervisor; J. B. Stevenson, advertising manager in Boston; James MacGrath, from the home plant in Mansfield; John Asbaugh, chief engineer, and John Camerson, refrigerator supervisor for New England.

Oklahoma Dealers View New G-E Line

OKLAHOMA CITY — More than 200 Oklahoma dealers and salesmen attended a sales meeting conducted by the General Electric Supply Corp. here Nov. 15 and 16, which featured a showing of 1938 models.

Howard Trekell, advertising manager, discussed sales and advertising plans and L. R. Radley, branch manager, presented new merchandise. Mr. Radley was assisted by Earl Rumbaugh, sales manager.

Long Co. Presents Frigidaire Products to Dealers

WICHITA, Kan.—The S. A. Long Co., Inc., distributor, was host to Frigidaire dealers and salesmen of the Wichita territory last week during a showing of the new Frigidaire electric range. Officers of the distributing firm who took part in the presentation included Roy L. Wood, general manager; E. L. Crabb, sales manager, and Sid Patterson, educational promotion manager.

Fairbanks-Morse Line Shown By Dayton Distributor

DAYTON—Clyde Graham, local manager of Appliances, Inc., Fairbanks-Morse distributor, staged a showing of 1938 F-M refrigerators in the Dayton-Biltmore hotel Nov. 30 and Dec. 1, for the benefit of approximately 100 dealers from about 20 counties.

The showing was open from 10 a.m. until midnight each day, and refreshments were served.

Westinghouse Supply Co. Buys Colvin Templeton, Inc.

SAN FRANCISCO—Colvin Templeton, Inc., electrical appliance dealer here, has sold out to Westinghouse Electric Supply Co.

Stokely to Manage Sales of Norge Distributor

PITTSBURGH—John W. Stokely has been appointed sales manager of the air-conditioning, heating, and commercial refrigeration departments of Ludwig Hommel & Co., Norge distributor here.

Before he joined the Hommel organization, Mr. Stokely occupied a similar position with a distributor in Norfolk, Va.

He also has had refrigeration sales and service experience in the Cleveland area.

Charlotte, N. C. Distributor Moves to New Office

CHARLOTTE, N. C.—General Appliance Co., Inc., North Carolina distributor of York air-conditioning equipment and distributor in both North and South Carolina for the full line of Apex appliances, the Brunswick Blue Flash beverage cooler, and the Electric Belle range, has moved to new and larger quarters at 515 S. Tryon St., reports John W. Huffaker, president.

The company also has opened an office in Raleigh, N. C., with P. O. Stahl as manager.

W. L. Shuping is general manager of the company's York air-conditioning department.

Scott Lumber Co. Appointed Delco-Frigidaire Dealer

WHEELING, W. Va.—The Scott Lumber Co., of which A. M. Scott is manager, has been named dealer for Delco-Frigidaire automatic heating and air-conditioning equipment. The company maintains headquarters in Wheeling, and showrooms and warehouses where the equipment will be displayed at Warwood, Follansbee and Weirton, in West Virginia, and in Wellsville, Martins Ferry and Bridgeport, in Ohio.

100 Electrolux Dealers See New Line at Dallas

DALLAS—Nearly 100 Servel Electrolux dealers, distributors, and representatives from throughout the south Texas territory convened in the Baker hotel here recently for a formal presentation of the 1938 line of Servel Electrolux refrigerators. Straus-Frank Co. is distributor.

Home Radio Sets Exhibited at Houston Auto Show

HOUSTON, Tex.—Home radio sets were displayed at the Houston automobile show this year for the first time in the history of the latter event. Bans by the management of the auto show have prohibited radio exhibits in the past.

Reader's Wholesale Distributors, Crosley agent here, is displaying a complete line of Crosley home and automobile radios in its large booth at the exposition.

Westinghouse Electric Kitchen Shown Arkansas Dealers

LITTLE ROCK, Ark.—Display of a modern kitchen completely fitted out with Westinghouse products featured the meeting held here recently for more than 50 Westinghouse dealers from throughout Arkansas.

Speakers were A. D. Peabody, general manager, C. E. Reed, merchandising supervisor, and E. L. Doelling, refrigerator supervisor of Southwest Electric & Mfg. Co., St. Louis; and W. G. Givens, manager of the electrical department of Fones Bros. Hardware Co., state distributor for Westinghouse.

Hadley Co. Named Frigidaire Dealer in Ft. Wayne

FORT WAYNE, Ind.—The Hadley Co., home furnishings firm, has been appointed Frigidaire refrigerator and electric range dealer in this territory. The company also sells Speed Queen washers. Edwin C. Hadley is secretary and general manager of the firm, and Harry Sharpe is assistant manager.

275 Dealers Attend Preview Of Frigidaire in Little Rock

LITTLE ROCK, Ark.—More than 275 dealers and salesmen in the Little Rock territory attended a preview showing of Frigidaire's 1938 electric refrigerators and ranges sponsored by McGregor's Inc., distributor covering the Tennessee and Arkansas area, with headquarters in Memphis. John McGregor, head of the distributing firm, was in charge.

14 Electrolux Dealers Win Convention Trip

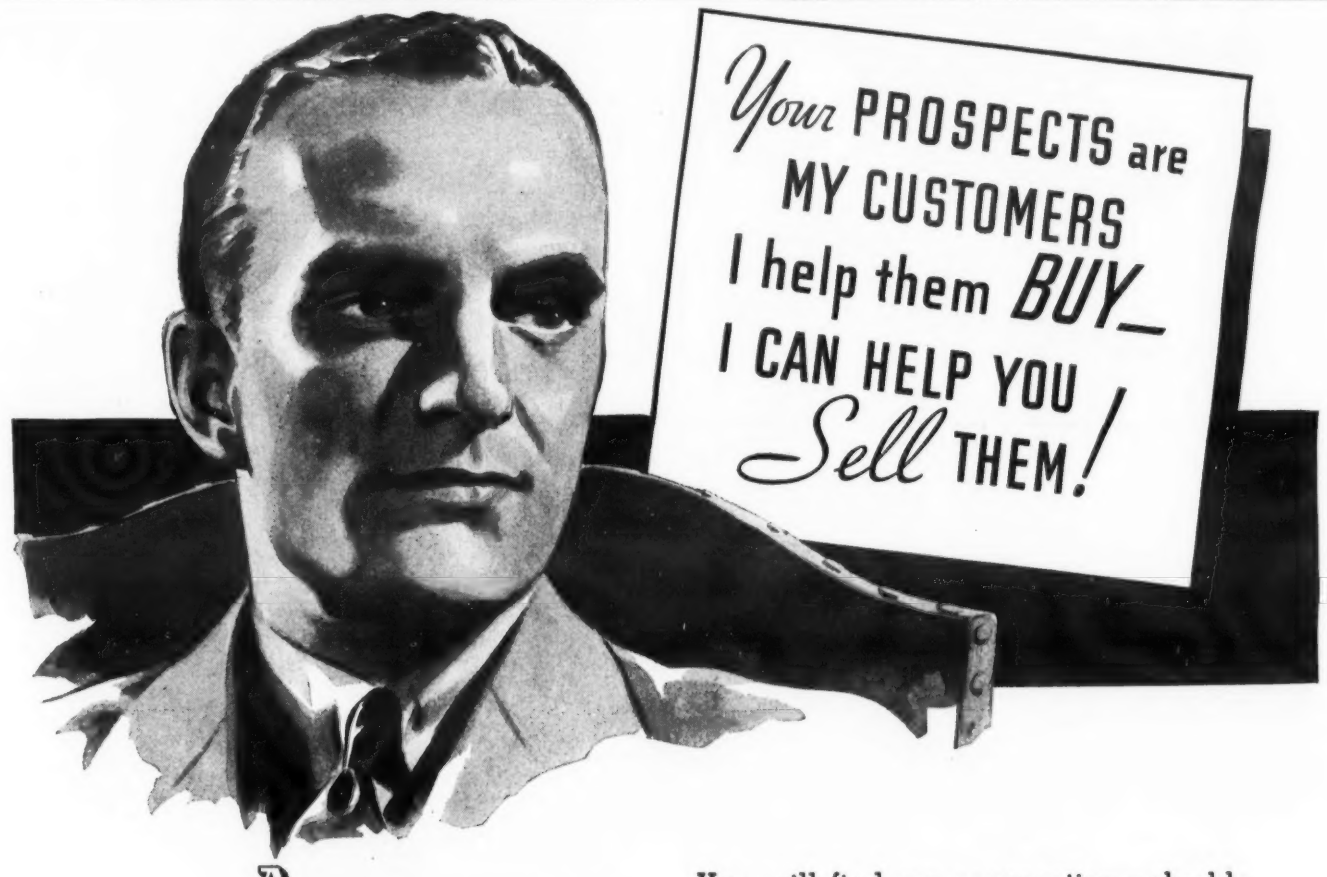
MINNEAPOLIS — Outstanding sales records during 1937 earned 14 dealers in the F. C. Hayer Co. Electrolux distributorship, which covers Minnesota and western Wisconsin, a trip to Kansas City, Mo., to attend a preview of the 1938 Electrolux refrigerators and sales plans.

The dealers are: H. J. Paulson, National Coal Co., Chippewa Falls, Wis.; A. L. Greaton, LaVenture Appliance Co., New Richmond, Wis.; George Saley, Onalaska, Wis.; R. A. Zachman, Zachman Appliances, St. Cloud, Minn.; George Jensen, Jensen Hardware, Rochester, Minn.; B. Pierce, Decker Hardware, Austin, Minn.; S. Speltz, Speltz Grain & Fuel Co., Albert Lea, Minn.; E. Meierbachtol, LeSueur, Minn.; E. H. Hentges, Canby, Minn.; V. Martz, Martz Bros., LeRoy, Minn.; Paul Oldenburg, Elmore, Minn.; Mr. Hanson, Hofstad & Hanson, Madison, Minn.; Mr. Westerdahl, Nyquist & Westerdahl, Kerkhoven, Minn.; and Otto Reitz, Morris, Minn.

Woodmansee Heads Kansas City Election Board

KANSAS CITY, Mo.—J. E. Woodmansee, vice president and treasurer of Richards & Conover Hardware Co., Kelvinator distributor, has been appointed chairman of the new Kansas City election board by Gov. Lloyd C. Stark of Missouri.

Mr. Woodmansee is a past president of the Kansas City chamber of commerce.



A large percentage of the people you want to sell refrigerators to have done business with me before.

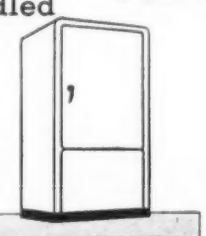
They are the people who buy on the time-payment plan.

I've helped them in their purchases of automobiles, washing machines and other electric appliances. They are friendly to me because I've handled their financing courteously and without friction.
The dealer who offers them my service is going to be a step ahead of the competitor who hasn't my help in building the customer-confidence that helps close sales.

You will find my cooperation valuable in other ways too.

I know people and conditions in your territory. I know how to investigate the credit of your prospects so as to eliminate the bad risks. I remit your money to you promptly and take the problems of collections entirely off your hands.

I am the local manager of a Commercial Credit office. I operate from 195 offices in principal cities of United States and Canada. Adopt Commercial Credit Company financing service for your time-payment sales, and let me work with you to get you the maximum profit.



COMMERCIAL CREDIT COMPANY

COMMERCIAL BANKERS
CONSOLIDATED CAPITAL

HEADQUARTERS: BALTIMORE
AND SURPLUS $65,000,000

SERVING MANUFACTURERS, DISTRIBUTORS AND DEALERS THROUGH 195 OFFICES IN THE UNITED STATES AND CANADA

COMMERCIAL REFRIGERATION

Kelvinator Direct Sales Staff Confers

DETROIT—Three-day fall conference of the direct sales department of Kelvinator division, Nash-Kelvinator Corp., was held here recently to discuss the company's products and policies for the 1938 season.

First two days of the conference were taken up by the outlining of Kelvinator's 1938 program and description of the new line of ice cream cabinets soon to be placed on the market.

Individual conferences were held during the third day. Edward R. Legg, national direct sales manager, conducted the session. Members of the national direct sales force who attended included P. B. Toohey, Boston; E. R. Kelley, New York City; D. J. Bowen, Atlanta; A. P. Hawkins, Memphis, Tenn.; W. G. Wright, Dallas; A. J. Lutz, Toledo; H. J. Priest, Detroit; R. J. Scheu, Chicago; R. N. Palm, Minneapolis; F. W. Topping, Seattle, Wash.; H. B. Johnson, Los Angeles; and J. A. Cowan, manager of ice cream cabinet sales for Kelvinator of Canada, Ltd., London, Ont.

A dinner on the second day of the conference was attended by Charles W. Nash, chairman of the board, George W. Mason, president, and other officials of the Nash-Kelvinator Corp.

Kelvinator Billboard at Dairy Show Features Cabinet

NEW ORLEANS—Simplicity and contrast were keynotes of a Kelvinator billboard located near the New Orleans auditorium where the exhibit of the Ice Cream Manufacturers' Association was held recently.

Boosting Kelvinator's line of ice cream cabinets, this billboard was worked out in dark blue and white on a black background, and was an enlargement of the advertisement which has appeared in various national ice cream journals and advertising display magazines.

Design of the billboard consisted merely of a greatly magnified reproduction of the seal which Kelvinator places on its ice cream cabinets and the words: "Kelvinator—The Best Known Name on Modern Ice Cream Cabinets."

Tyler Builds Test Room For Use in Proving New Products

NILES, Mich. — A completely equipped modern test room has been completed for the engineering department of Tyler Fixture Co. here. All new products will be thoroughly tested in this room before being added to the Tyler line.

Through use of a steam coil and a hot-water humidification system, temperatures of more than 100° F. and humidity as high as 90% can be obtained in this room.

Both the steam coil and the humidifying apparatus are controlled by motor valves actuated by thermostats located inside the test room. Temperature and humidity can be maintained at constant levels in all parts of the room.

The room is equipped with all sorts of testing and recording instruments, including hydrometers, humidistats, thermostats, watt hour meters, pressure and vacuum recorders.

Quillen Markets Small Size Display Case

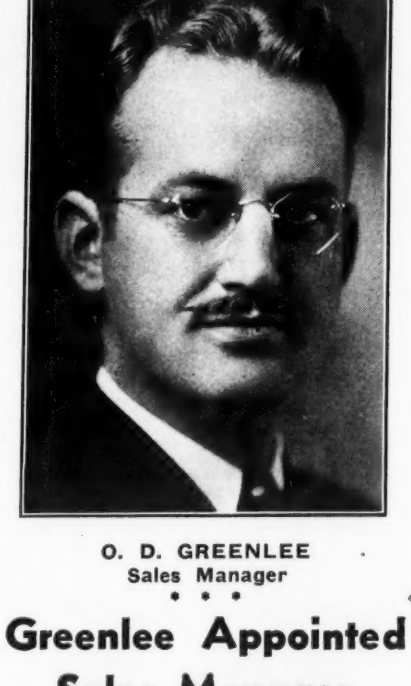
INDIANAPOLIS—As the "leader" model of its 1938 commercial refrigerator and display case line, Quillen Brothers Refrigerator Co. has put on the market the Quillen "Quint," a 4-ft. display case which is said to be especially adapted to the needs of the small grocer, as well as to operators of lunchrooms and taverns.

Five features are claimed for the "Quint": beauty, economy of operation, quality construction, better display, and engineered refrigeration.

The display case, a "packaged" job with a self-contained Quillen condensing unit, is designed for easy installation in small or crowded quarters. It is said to embody all the features of the larger Quillen cases and commercial refrigerators, which include 4 in. of insulation, a Peerless off-center coil, double down-draft, "no-drip" baffle, and ample storage space.

Although the model has been off the assembly line only four or five weeks, orders now on hand are sufficient to keep production going at top speed for the next 90 days, claims Carl Quillen, general manager.

New Executives of Kold-Hold Mfg. Co.



O. D. GREENLEE
Sales Manager

J. R. TRANTER
President and General Manager

JAMES M. DEGNAN
Vice President

Greenlee Appointed Sales Manager Of Kold-Hold

LANSING, Mich.—Appointment of O. D. Greenlee as sales manager of Kold-Hold Mfg. Co. has been announced by J. R. Tranter, president and general manager of the company.

Mr. Tranter, who is also president of the Hill-Diesel Engine Co. of Lansing, purchased the controlling interest in Kold-Hold in June of this year, and recently superseded W. G. Farnsworth as general manager in taking over active control of the company's affairs.

Mr. Greenlee, the new sales manager, has been with Kold-Hold since 1933. Starting as a development and research engineer, his efforts were later directed into the selling end of the business in the capacity of sales engineer.

A graduate engineer of Stanford university, Mr. Greenlee's first employment was with Delco-Remy. From there he went to the proving test department of Frigidaire, and later served in the commercial engineering test department of the same company, after spending some time in the G-M radio and Frigidaire cabinet department of G-M radio sales.

Just prior to joining Kold-Hold in 1933, Mr. Greenlee had been employed in the production and engineering test department of the Crosley Radio Corp.

At the annual stockholders and board of directors meeting Nov. 8, James M. Degnan of Lansing was elected vice president of the company, and a member of the board.

Mr. Degnan is also vice president of the Hill-Diesel Engine Co., and had previously been associated for a number of years with Worthington Pump & Machinery Corp., manufacturer of refrigerating and air-conditioning machinery.

Beverage Truck Employs Two Compartments

MANKATO, Minn.—Specially designed to carry both refrigerated draft beer and unrefrigerated cases of bottled drinks, a new type of truck body has been built by Ebenhoh Body Shops, of Sleepy Eye, Minn., for Key City Beverages, local distributor.

The body, which is mounted on an International truck chassis, has two sections, an open compartment in front for carrying cases of soft drinks, and a refrigerated section in the rear for the draft beer. This latter compartment is 6 ft. wide, 5 ft. long, and 4 ft. 4 in. high. It is insulated throughout with 2-in. Dry-Zero Sealpad.

Mississippi Cold Storage Plant Is Opened

BRANDON, Miss.—Rankin county's cold storage plant was opened here Nov. 12 with a demonstration of meat cutting and curing, according to County Agent R. G. Prescott.

This plant, one of 10 in the state, was completed some time ago at an approximate cost of $25,000. The charge for curing, smoking, and wrapping meat has been set at 2½ cents per pound.

5 Commercial Distributors Appointed by Kelvinator

DETROIT — Appointment of five new commercial distributors for Kelvinator division, Nash-Kelvinator Corp., has been announced by J. A. Harlan, commercial sales manager.

The new distributors are: Auto Electric Service Co., Manchester, N. H.; Allen Distributing Co., Lima, Ohio; Robinson's, Inc., Columbus, Ohio; Electric Construction & Supply Co., Oswego, N. Y.; Florida Sales Corp., Miami, Fla.

G-E Prepares Booklet on Refrigerated Lockers

CLEVELAND—Containing a concise history of the cold storage locker plant industry from its beginning, a booklet presenting suggested layouts for modern plants, recommended equipment, ideas and suggestions for building and operating a modern plant, advantages and possible profits for patrons and operators, has been prepared for free distribution by the commercial refrigeration section of General Electric Co.

As a complementary aid, the G-E commercial section also is offering a complete planning and estimating service without cost to any individual or association considering the construction of a modern cold storage locker plant.

Commercial Sales Total $217,638 for Power Co.

ATLANTA — Commercial refrigeration and water cooler sales of Georgia Power Co. for the first nine months of 1937 totaled $217,638.23. Sales of air-conditioning equipment amounted to $26,040.68, and $20,466.40 worth of ventilating fans were sold.

Nearly $26,000 worth of commercial refrigeration equipment was sold in September alone. September air-conditioning sales reached $3,258.

Refrigerating Plant Tested On River Barge

KNOXVILLE, Tenn.—An experimental refrigerating plant to test the economy of shipping frozen fruits on the Tennessee river enroute to St. Louis and Chicago markets is being installed on a barge here by the Tennessee Valley Authority.

About 1,000,000 lbs. of strawberries and other fruits will be refrigerated on the barge for the initial test next spring.

HILL REFRIGERATORS ARE EASIER TO SELL

THE new Hill line of *improved* Reach-in Refrigerators for restaurants, hotels, institutions, hospitals and bakeries is easier to sell because better made—and noticeably so. The low conductivity corkboard insulation is thicker, the interior and exterior are genuine porcelain, the hardware is of special design, the coils are more easily reached, the proportions are more graceful, and the refrigeration is better.

Send for 32-page illustrated catalog, describing outstanding HILL features and listing complete specifications.

Hill Products Division
C. V. HILL & CO., Inc., TRENTON, N. J.

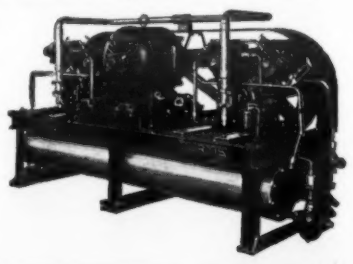
1 2 **3** 4 5 6 7 8 9 10 11 12 13 14 15

No. 3 of a Series of Curtis Advanced Engineering Features.

CURTIS DESIGN MAKES VALVE INSPECTION QUICK AND EASY

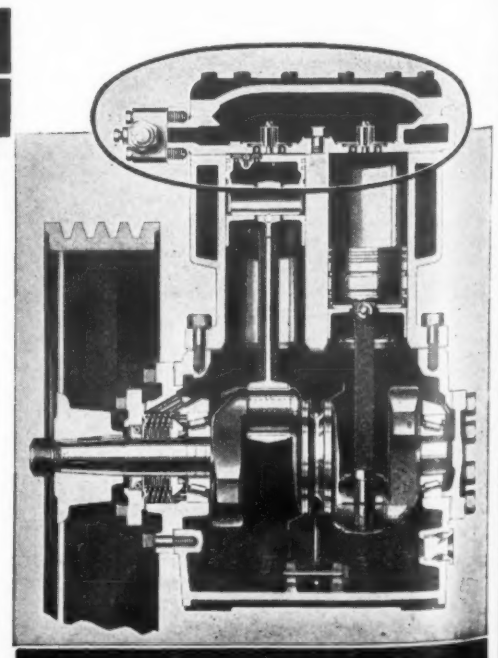
● The large removable chamber cover plate makes it unnecessary to disconnect gas lines for inspection of the discharge valves in Curtis compressors. This also acts as an expansion chamber, giving an even flow of refrigerant through discharge lines and assuring quiet, vibrationless operation.

This and other advanced engineering features of Curtis compressors have made the Curtis name recognized as a leader throughout the industry. In every phase of refrigeration and air conditioning thousands of Curtis units are delivering low cost, trouble-free service year after year.



Call your Curtis representative or write the factory for complete information.

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Co.
1912 KIENLEN AVENUE ST. LOUIS, MO.



CURTIS
"Builders of Condensing Units Since 1922"

Represented in Canada by
Canadian Curtis Refrigeration Co., Ltd.
20 George St., Hamilton, Ont., Can.

AIR CONDITIONING

Engineer Emphasizes Importance of Having Consultation in Air-Conditioning Work

25 Lafayette Ave.
Brooklyn, N. Y.
Nov. 22, 1937

Editor:

Why has the NEWS discontinued "The Air Age"? As one Consulting Engineer to another I have a message to its author derived from 15 years in heating and ventilating practice and four years in which in the same manner I handled the equipment of fruit storage rooms in active competition with the established manufacturer-contractors. Since this question of the independent engineer frequently arises in your columns, my conclusions may still be of some value in clarifying the conflict.

The experienced heating-and-ventilating engineer is thoroughly capable to determine the load and method most applicable to a given problem. He is accused of the general habit of over-estimating the load; but that habit is due to a greater understanding of human psychology.

In cold storage work, thermometers give convincing proof of the satisfactoriness of the conditions maintained; but a human being wants to "feel" comfortable and refuses to be influenced by thermometers. Heating men have long known that no man will modify his habits to aid his air-conditioning plant. If he wants a maximum of sunlight, he will not shade his windows to reduce the cooling-load. If he is a fresh-air fiend, he will use far more ventilation than the experts say he needs.

Furthermore, he is neither consistent nor just in his reactions. He may have insisted upon a smaller plant capacity to reduce expense; he may be proud of the installation during the first year while it is still a novelty; admit its short-comings the next year; and thereafter condemn it vigorously to the detriment of the seller's prestige.

The conservativeness of heating engineers is derived from experience; it remains to be seen whether refrigeration engineers can alter human nature successfully.

During a conversation last Spring, an executive of an organization which may truly claim leadership in developing comfort-cooling, declared that certain of their competitors were hurting themselves by trimming capacities too closely.

The actual objection of the air-conditioning manufacturers to the activities of the Consulting Engineer is predicated upon the archaic and inefficient Owner-Architect-Contractor arrangement. This ancient relic of the guilds has not kept pace with the growth of industrial efficiency in other lines. Designed for the manufacture of items cut, fitted and assembled entirely from rough or semi-finished materials at the site; it makes little provision for factory-built or integrated equipment.

The modern trend of mechanical equipment of buildings is toward continually larger proportions of factory-completed items. The mechanical engineer is required to make drawings and write specifications for the complete installation without being able to know the physical description of the important items; knowing full well that his plans cannot be accurate for construction puposes or as a record, nor more than a rough guide to bidders. After the award of contract, the manufacturer finds himself compelled to make a sale upon price to the Contractor while severally selling the Owner, the Architect, and the Engineer on quality. In the end, he finds himself custodian of the "buck" in the shape of a series of interlocking guarantees; under the necessity of revising the Engineer's plans to fit the equipment sold; and forced in self-preservation to furnish instruction for, and supervision of, the installation of his own product by a contractor whom he may not consider reliable.

The privileges of the Contractor as purchasing agent of factory-completed equipment is an astounding perversion of economics. Unlike other ethical purchasing agents, the Contractor reserves to himself any savings he may be able to make in purchases. In view of the fact that the Owner must have arranged the capital for the entire building program in advance, and that he reimburses the Contractors for expenditures within a few days; there is no reason for the exercise of the purchasing-agency of the contractor save the profits resulting to himself.

Many business concerns which have frequent building programs have refused to admit this prerogative of the contractor and buy directly all major items of manufactured equipment to the evident benefit of the Owner and of the manufacturers. There is every reason why all purchasers of new building construction should do the same and very few reasons why they should not. If the Contractor furnished only the use of special tools, skilled labor, and bulk materials of which he, and not the Owner, can economically carry an "inventory"; construction would be obviously handled more efficiently and economically for all concerned.

Reluctance to adopt more modern policies should not be charged entirely to inertia nor to the selfishness of contractors. The items of construction in which the Architect is the more personally concerned are still built from semifinished material on the job; while those in which the mechanical engineer is directly interested are becoming more and more factory-completed. The need for the unbiased and specialized knowledge of the engineer becomes even greater but the economical application thereof needs a different technique than the present system.

We engineers need the aid of alive publications to awaken the minds of our contemporaries to changing conditions. 'The Air Age" was making a valuable contribution. Why not continue?

HERBERT B. ADDINGTON, B.S.M.E.

Answer: The discussion of this and that affecting the air-conditioning business in the "Air Age" column written by F. O. Jordan, has not been permanently discontinued. During the past few weeks much space has been devoted to information regarding the new lines of household electric refrigerators and the distributor meetings of the various manufacturers and it has been necessary to touch lightly upon some other subjects.

Since the NEWS is primarily a newspaper and since it serves all branches of the refrigeration and air-conditioning industries, the editorial columns of the paper reflect the seasonal changes in interest and activity throughout these fields.

During the course of a year there is editorial emphasis upon new lines of household and commercial refrigeration and air-conditioning equipment, the activities of manufacturers, distributors, dealers, jobbers and service companies, also of engineers, production men, salesmen, etc., each group and subject getting the spotlight in its turn.

50 Airtemp Employes To Attend School

DAYTON — Fifty men selected from 150 applicants will form the first class of the school which Airtemp, Inc. has organized for the purpose of acquainting its local factory and office employes with the principles of air conditioning and with the main features of Airtemp products.

Candidates were selected on the basis of educational background and potential ability. Twenty college graduates are included in the first class. Final selections were made by various department heads in cooperation with the employment department.

V. Pool Black, factory service manager, will serve as instructor of the school. Class meetings will be held every Monday night for a period of 10 weeks in a special classroom in the Airtemp plant. Lectures will be confined strictly to Airtemp products, and no attempt will be made to compare these products with those of other manufacturers.

High officials of both Airtemp, Inc. and Chrysler Corp. are scheduled to be present at the banquet and graduating exercises which will be held at the close of the course.

When the present class has been graduated, 50 more employes will be picked for the course.

"We hope that this course will develop a better understanding of the air-conditioning business among our employes," Mr. Black explained, "which, in turn, will make these employes more valuable to the company."

Servel & Trane Units Cool Air in Funeral Home

ALLENTOWN, Pa.—Hardner Engineering Co., Servel distributor in this territory, has completed installation of a model WAO-500 Servel air-conditioning machine unit, combined with a Trane conditioner, in the Weber Funeral Home here, said to be the first air-conditioned funeral establishment in the Lehigh Valley.

Ducts in this installation were arranged so as to distribute air through an entrance hall and into the main sitting room and slumber room, all of which are on the first floor. A branch duct supplies conditioned air to the casket display room on the second floor.

Installation was made, according to Mr. Hardner, without any interruption of the funeral home's daily routine. The work was supervised by Gerald Clare, applications engineer.

William Weber, owner of the funeral home, was so satisfied with this installation that he since has placed an order with Hardner Co. for additional Servel equipment to air condition the mortuary room.

Doctor Stresses Need for Close Cooperation of Air-Conditioning Engineer & Medical Profession

NEW YORK CITY—The need for increased cooperation between the air-conditioning engineer and the medical profession was stressed by Dr. Thomas R. Thorburn, D.O., M.D., assistant surgeon of the New York Ophthalmic hospital and head of the nose, throat, and ear department of the New York Osteopathic clinic, when he spoke to the New York chapter of the American Society of Heating and Ventilating Engineers on "What Patients Tell Their Doctors about Air Conditioning."

Air-conditioning practice, Dr. Thorburn pointed out, has established certain standard atmospheric conditions to which the public must be adapted in order to extract the greatest benefits, and this requires a vast amount of educational work on the part of doctor and engineer.

Dr. Thorburn also expressed the opinion that the importance of shock between indoor and outdoor temperature is of greater significance to health during winter than in summer.

He indicated that this influence is not always beneficial, however, declaring that the tendency to eat more and heavier food in air-conditioned restaurants during summer often accentuates the feeling of discomfort experienced upon emerging from such places, because the additional amount of food increases the individual's metabolism and makes the body less able to quickly adapt itself to a change of atmospheric conditions.

Intelligent operation of an air-conditioning system is a important as proper installation, Dr. Thorburn stated, for the results of this operation are largely responsible for creating favorable or unfavorable public reaction to air conditioning.

Dr. Thorburn made a special plea for educational campaign designed to make the public realize that most complaints about the harmful effects of air conditioning come from persons suffering from some uncertain physical deficiency or surrounded by a harmful psychological environment, and that the average normal person in entirely immune from such effects.

This Is the Wrist Pin

Just a very small part of every unit. But its balanced feel, its silky sheen, are indicative of superb machining that makes possible the service-free performance of the Mills Compressor.

Mills Condensing Units

Mills Novelty Company, 4100 Fullerton Avenue, Chicago, Illinois

HERE'S ONE

The sales organization of the Joseph Strauss Company views Leonard's 1938 plans.

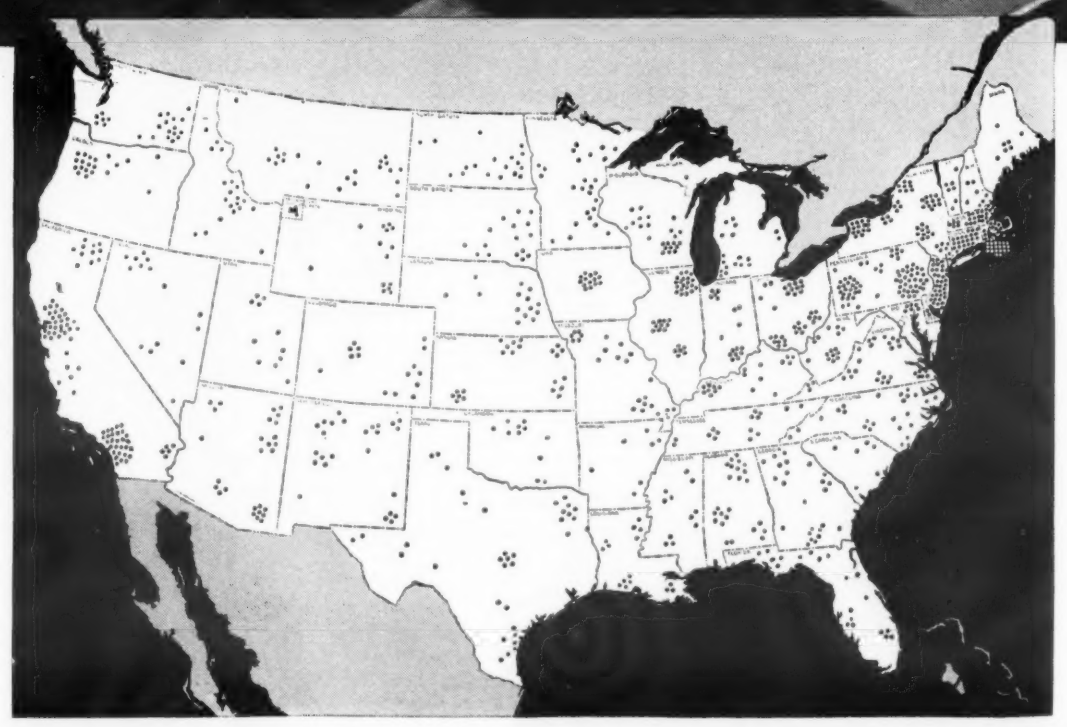
Get this—

During the summer of 1937 six hundred women tested the 1938 Leonard Refrigerator in their homes. These 600 homes are located all over the United States—in every state of the Union.

The owners of these 600 Leonards kept accurate records of the performance of their refrigerators. Records of their operating cost—daily recordings of kitchen temperatures and temperatures inside the cabinets. Service calls were also carefully noted. These records, now in Detroit, prove two things—and prove them conclusively.

First that the 1938 Leonards are more efficient, more economical to operate, more usable and convenient than ever before.

Second that they will reach dealers ready to perform 100 percent; that they will operate under any conditions in the homes of users anywhere. Truly the 1938 Leonard will be a "tried and proven refrigerator".



1938 LEONARD—

YOU CAN GO TO TOWN ON!

NO REFRIGERATOR DISTRIBUTOR EVER HAD A STORY LIKE THIS TO TELL HIS SELLING ORGANIZATION

600 LIKE HER WROTE THE 1938 LEONARD STORY
And no refrigerator manufacturer has ever had a Selling Story like this to tell!

"When I got a glimpse of the Leonard Story—product and program—for 1938, my worries about selling refrigerators next year went out the window.

"The minute I saw it I knew that here was a story that my wholesale men would literally eat up and go to town on. Not merely because I felt they would like the story itself but because I knew they'd get the same reaction that I got—it would sell Leonards to dealers and to consumers.

"I was 100 percent right. When I broke it to my boys, they actually cheered!

"And no wonder—because this 1938 Leonard story has got everything it takes. A product that has been built from the ground up to make a woman's mouth water when she looks at it. A product with a new mechanical unit that has been proved and enthusiastically endorsed by 600 women a full year in advance! An economy story that has never had an equal.

"Plus sure-fire advertising and promotion plans that we know will produce store traffic for dealers. Plus a floor selling set-up that even a cub salesman will quickly grasp and effectively use.

"Yes sir—the 1938 Leonard story is a honey and I'm sure I voice the opinion of every Leonard distributor when I say that here's a story that the wholesale man, the dealer and the salesman will *all* go to town on!

"It's got power and punch—and better still, it's *believable.*"

Ed. Ball
Secretary
THE JOSEPH STRAUSS CO., INC.
25-41 High St., Buffalo, N. Y.

LEONARD—*Division of Nash-Kelvinator Corporation, Detroit, Michigan*

"Biggest Bargain in Refrigeration Today"

AIR CONDITIONING AND REFRIGERATION NEWS

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Only 24 Days Till Christmas

HOLIDAY buying is said to be starting out slowly in many lines and in many cities, but holiday *selling* is another story. This will be the first Christmas season in the history of the industry which has found the household refrigeration industry prepared to make a real campaign for the family gift business, and nearly everybody seems to expect the campaign to show highly satisfactory results.

Selling refrigerators in the winter has always been a tough job. Selling them for Christmas presents has been further complicated by the fact that the buying public has usually been inclined to wait until the new models are introduced.

Answers to Both Objections

This season dealers have answers to both objections. They have new economy "proof" stories — plus gadgets and demonstrations — geared to show incontrovertible savings during cold weather. And they have their showrooms stocked with the new 1938 models.

Taking a cue from the automobile and radio industries, refrigeration manufacturers have been practically unanimous in readying their 1938 lines for the trade in time for the Christmas season. Dealer conventions are now being held all over the land, and public showings of the new models are being made.

From the manufacturers' standpoint, this early introduction of models is an excellent move. Previously, they have had executive staffs which have been worked to the point of nervous prostration in the spring, just barely recovering in time to do their fall worrying.

Factories have been run at full tilt—and often uneconomically—in the spring, while lying idle in the fall. Distributors and dealers have kept the long distance phones hot in the spring, yelling denunciations at the order and shipping departments. Everything happened at once, and incipient apoplexy was rife.

Time to Think and Study

Contrast that situation with today's picture. The new models have been brought out carefully and leisurely. National conventions have been held at a time when distributors and dealers had time on their hands, and an inclination to study the information presented to them. Deliveries have been made to all and sundry. Dealers can now devote the coming months to selling, and manufacturers and distributors to promotion.

From the dealer's standpoint, the early introductions help him keep his salesmen through the winter months, thereby reducing wasteful turnover, in addition to evening up the dealer's own income. His promotion schedule can be made more continuous and effective, and his financing and warehouse problems are simplified.

Can Now Concentrate

The new program enables a small dealer to concentrate on refrigeration sales the year around, and a large dealer to keep a specialized refrigeration department operating on a 12-months' period, likewise. Thus groundwork effort on prospects, which might have been lost, had the dealer turned his attention away from refrigeration and toward other products, can be carried to the dotted-line conclusion.

This spreading-out of the manufacturing and selling season is something the household refrigeration business has long needed, but has never been able to realize. Judging from all the portents and omens visible, current efforts in that direction should be the most successful to date.

Dramatic New Models

Outwardly, the new models present little change in appearance, on the whole. But the discerning dealer and salesman will find that most of the new lines have been redesigned to *dramatize* the sales presentation. This season it will be easier for the housewife to *see* what she is getting, to *envisualize* the savings and conveniences she is buying.

General Electric

Outstanding new convenience feature of the 1938 G-E refrigerator probably is its "Quick Tray," which is said to combine faster freezing with easy cube release. The cube release lever on these trays also serves to loosen the trays from the shelves, and even may be used as a bottle opener.

Like most of the new lines, G-E this year features increased flexibility of arrangement both within the cabinet and within the evaporator. A large, non-refrigerated storage compartment also is featured.

Norge

An odor-proof evaporator leads off Norge's list of features for 1938. This list also includes rubber grids in metal ice trays, a three-position defrosting or quick-cooling tray beneath the evaporator, and a new flexibility in shelf arrangement.

Deluxe models feature three covered glass leftover dishes, two water bottles, and a set of individual dessert containers.

Frigidaire

A new method of suspending the freezer in back of the cabinet permits beneficial changes in construction and assembly of the new Frigidaire, company officials claim. This refrigerator also has a faster ice-cube release, a reshaped freezer unit, and enlarged and moisture-proof Hydrators.

Redesigned shelves with more closely spaced bars to prevent tipping of small bottles or dishes are arranged to offer increased flexibility within the food compartment. The all-steel, one-piece, wrap-around cabinet and chassis is equipped with a new type of insulation. Quieter operation is claimed for the "meter-miser."

Westinghouse

Westinghouse for 1938 features an enclosed porcelain meat compartment (which also can be used as a defrosting tray) located directly beneath the evaporator, an enlarged evaporator and froster, a temperature regulator which provides "zone" control, and "Ex-press" tray releases.

The adjustable-height sliding shelves have closely-spaced grids to insure a flat surface for dishes, etc. The new humidrawer for fruits and vegetables extends the full width of the food compartment, and has a transparent glass top so that its contents are visible at a glance.

Fairbanks-Morse

A newly designed Conservador which has pressed metal shelves in place of wire racks, dial-type temperature control on all but EX models, a non-refrigerated storage compartment on 6 and 7-cu. ft. models, and improved hinging on the cabinet door—thats the Fairbanks-Morse improvement story for 1938.

Stewart-Warner

Econ-O-Light, a tiny light on the exterior of the cabinet which shows when the unit is operating, is Stewart-Warner's big new talking point this year.

Along with this device are other special features, which include an improved 16-point cold control, an enlarged porcelain-covered evaporator, an "Instant-Cube" release, a cold storage chest which replaces the defrosting tray, a newly designed evaporator door, a built-in thermometer, and an automatic overload protective device.

A three-piece covered dish set is offered with Deluxe models. An all-metal, vapor-sealed cabinet door is said to reduce heat leakage, Fiberglas insulation is used in all models, and belt-tightener motors are furnished with all but Special models.

Hotpoint

An independently powered fan which cools the condensing unit and an ice tray which will eject two cubes at a time are notable features of the 1938 Hotpoint refrigerator. This unit also boasts an automatic protection device, a new shelf arrangement, and a 16-point cold control.

Crosley

Boasting a better mechanism and advanced exterior styling, Crosley, too, has followed the general trend of improvement with a new quick-action cube release and tray release operated by the same lever, an 18-point cold control, a crisper, a new cold storage tray, and an adjustabel shelf arrangement to increase interior flexibility. A new push-pull door handle provides easier access to the cabinet.

Dayton

A new-style V-front door, a silver satin, fast-freezing cooling unit of horizontal design, an enlarged evaporator which includes a frozen food tray, and a concealed interior light operated automatically by opening and closing the door, are among the features employed on the 1938 Dayton refrigerators.

Altered shelf arrangement in these units provides for a quick-chill compartment in place of a defroster tray. A non-refrigerated vegetable bin is included in all models.

Prices Kept Low

One surprise of the recent introduction period has been the prices. Most dealers expected retail list prices to be upped considerably. Much to their gratification, the advances were chiefly confined to the deluxe lines. Frigidaire and Westinghouse, for example, are retaining base prices of $119.50. Hotpoint has a kitchenette model for $116.

Porcelain models, with all the trimmings, are over $200 in most lines. Five-year warranties (one-year guarantee plus a four-year unit replacement plan) are still being offered.

By the time this issue of the NEWS gets into the hands of readers, more than three weeks of the holiday selling season will remain. Freshly imbued with the enthusiasm engendered by the conventions, salesmen should tear into this period so effectively that they will be off to a flying start in 1938. It will then be the job of manufacturer, distributor, and dealer to maintain their momentum.

LETTERS

Best Book of Its Kind on the Market

Box 225 A, Birmingham, Ala.

Sirs:

Enclosed you will find P.O. money order for $11 for which please send 11 copies of the first volume of "Master Service Manual, Household Refrigeration."

I have been using this manual for the past three years as a textbook for beginners at Paul Hayne Vocational School here in Birmingham and wish to say it is the best book of its kind on the market today.

From time to time I expect to order more of these books and would appreciate it if you would give me a discount on quantity orders. Please advise.

ED GOTHBERG.

Answer: We offer a discount of 10% on book orders amounting to $25 or more.

Says Nov. 17 Editorial Points To a Situation

Air Conditioning Manufacturers' Association
Southern Building, Washington, D. C.
Nov. 22, 1937.

Editor:

The editorial in your Nov. 17 issue, "New Homes and Air Conditioning," is constructive and points to a situation which must be carefully considered by everyone interested in the future of the air-conditioning industry. There is small doubt that the residence field will be a major air-conditioning market in the "medium-range" future. I hope the NEWS will continue its helpful comments on the subject.

Incidentally, an interesting trend is that a number of large companies, heretofore principally known for their interest in the cooling field, are including a constantly broadening line of heating units with their year-around air-conditioning equipment. The trend is particularly indicated by the activity of such ACMA member companies as Carrier, Delco-Frigidaire, General Electric, Kelvinator, Westinghouse, and York. On the other side of the picture, several substantial companies, for years primarily engaged in selling heating equipment, are evidencing an active interest in the cooling phases of air conditioning, especially for residential applications.

WILLIAM B. HENDERSON,
Executive Vice President.

They Will Recommend 'Made Easy' Manuals

Kinetic Chemicals, Inc.
Wilmington, Del.
Nov. 22, 1937

Editor:

I have your letter of Nov. 20 respecting the series of manuals entitled AIR CONDITIONING MADE EASY by F. O. Jordan and have had an opportunity of inspecting these manuals and find them very complete and entirely understandable.

We shall, therefore, be very glad to recommend these books to anyone who is seeking air-conditioning information from us.

We are sometimes asked to advise young people who wish to learn about the science of air conditioning. Will you kindly express my appreciation to Mr. Jordan for the fine work he is doing on behalf of the industry and give him my very kindest regards?

W. W. RHODES, Sales Director.

Maybe It's Open Season On Refrigerators

Stern & Co., Inc.
Stern Building, Hartford, Conn.
Nov. 17, 1937.

Editor:

I had such a good laugh this morning, that I want to pass it along to you, thinking that in these times of stress when business is not as good as it should be and everyone is inclined to be a little down-hearted, that this story would be the cause of a little merriment and mirth to those who may see it. This is an actual occurrence that came into us this morning from one of our good dealers in the town of Pittsfield, Massachusetts:

"One of our customers accidentally fired a gunshot through the door of his refrigerator. Will you please advise us what this door, less hardware, will cost."

We called up the dealer to find out if his customer was dissatisfied with the service his refrigerator was giving him and if he got so darn mad that he fired at it! Apparently, it was a legitimate accident; nevertheless, such a gale of laughter went through our entire organization this morning when this letter came to our Service Department, that I thought it was too good to hold.

What do you think about it?

F. E. STERN.

Information Easily Found in Red Book

Johnson Service Co.
Milwaukee, Wis.

Johnson System Temperature Regulation —Humidity control.
Automatic Temperature & Humidity Control Systems Applied to all types of Heating-Cooling-Ventilating and Air-Conditioning Installations.

Nov. 24, 1937

Gentlemen:

We wish to acknowledge and thank you for the copy of the Red Book, containing manufacturers' literature.

We are placing this edition in our files, as we believe that the information in this book will be of considerable benefit to us from time to time. This book is well arranged and indexed in such a manner that it is not difficult to locate information with regards to the particular problem that one may be confronted with at the time.

Will you please place the writer's name on file, so that future issues will be mailed accordingly?

If no objection on your part, we would prefer an extra copy for our Engineering Dept., c/o C. A. Otto, chief engineer.

C. F. ROHRBUK,
Purchasing Agent.

H. Ehrlich & Sons Mfg. Co.
Colorado & Lake Ave.
St. Joseph, Mo.
Refrigerator Display Cases

Publisher:

Wish to thank you very much for sending me your 1937 MASTER CATALOG, and assure you that same is appreciated.

This book certainly is gotten up in mighty nice shape, and we hope to be able to make good use of it.

A. EHRLICH.

MAJOR APPLIANCES

1,394,755 Washers Sold in 9 Months; Ironer Sales Up

CHICAGO — Household washer shipments during the first nine months of 1937 totaled 1,394,755 units, compared to 1,379,062 for the first three quarters of 1936, according to figures reported by J. R. Bohnen, secretary of American Washing Machine Manufacturers' Association.

Shipments during the first nine months of this year were greater than those during any whole year in the industry's history, with the exception of 1936, when 1,729,135 units were shipped. Washers retailing at $70 or more accounted for 41.5% of all January-September sales this year.

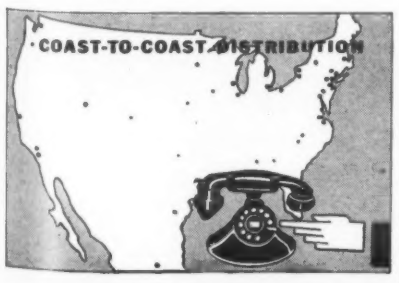
Household ironer shipments also increased, the nine-month figure being 147,683, compared to 136,413 in the corresponding period last year. Mr. Bohnen expressed the opinion that this increase was partly due to the growing practice of planning fully equipped laundering rooms in the construction of new homes and the remodeling of old.

Personalized Radios Featured In Crosley Xmas Sales

CINCINNATI—Personalized radio sets, bearing the owner's initials in gold-finished metal, have been introduced for the Christmas selling season by Crosley Radio Corp., according to Don Crosby, manager of the radio sales division.

OPERATES AT POSITIVE PRESSURES . . . EVEN AT SUB-ZERO TEMPERATURES

ARTIC makes it possible to get temperatures down to —10.65° F. without going into vacuum on the low side. This prevents entrance of air and moisture—another reason why ARTIC is the Preferred Refrigerant for the necessary low temperatures now required in ice cream cabinets, household and commercial units. Write for complete technical information.



ARTIC—*the Preferred Methyl Chloride for Service Work*

DU PONT

E. I. Du Pont de Nemours & Co., Inc.
The R. & H. Chemicals Dept., Wilmington, Del.

Kitchen Modernization Leads to Sales of Water Heaters

DETROIT — The present trend toward kitchen modernization is largely responsible for the rapid increase in electric water heater sales, according to Pierre L. Miles, sales manager of electric water heaters for Kelvinator division, Nash-Kelvinator Corp. The new heaters, he said, are being especially designed to fit in with the current mode of kitchen planning.

For one month this year, water heater sales were 59.3% above sales during that same month in 1936, Mr. Miles stated, and the 1936 total of 104,000 units was 48% above total sales for 1935.

Pointing to the vast potential market for this type of appliance, Mr. Miles declared that more than one-third of all American homes have no other hot water facilities than a teakettle or some similar kitchen utensil. Many other homes, he said, are equipped with coal burning systems which fail to supply an adequate amount of hot water for the family's needs.

The average family, Mr. Miles pointed out, requires 10 gal. of hot water per person per day, in addition to the water used for dishwashing, laundering, and other household purposes.

To introduce water heaters to this potential market, dealers and utilities have cooperated this year in sponsoring a wide-spread promotional campaign.

Utilities serving 10,000,000 domestic customers now have rates that are bringing electric water heaters within the reach of the average family, he declared, but whereas formerly at least 60% of all water heaters were sold by these utilities, increasing numbers of heaters are now being sold by independent dealers.

Rex Cole Salesmen Visit New G-E Washer Plant At Bridgeport

BRIDGEPORT, Conn. — Eighteen members of the wholesale organization of Rex Cole, Inc., General Electric home laundry equipment distributor in the New York City area, recently visited the new G-E washer and ironer plant here under the guidance of Robert Stevenson, appliance sales manager for Rex Cole, and R. H. Roden, G-E district home laundry specialist.

Manufacturing processes were explained to the men by G. H. Reama, factory superintendent, C. K. Skinner, managing engineer, and David Hays, commercial engineer. John M. Wicht, laundry equipment sales manager, later instructed the men in new merchandising methods.

Making the trip were Bill Bishop, Larry Hills, Paul Meyer, Harold Caspers, Nat Dryden, Bill Monohan, Andy Zoltac, Ed. Dunn, I. Ponen, F. Beucheler, J. Eccleston, R. Stevenson, F. Beck, B. Strouse, J. Horton, M. Klaus, and M. Haas.

Lewis Will Manage Laundry Sales for Fairbanks-Morse

FORT WAYNE, Ind.—Joseph C. Lewis, former manager of the Horton Mfg. Co. here, has been named manager of the home laundry equipment division of Fairbanks, Morse & Co. and will make his headquarters at Indianapolis, it was announced here.

Mr. Lewis had been general manager at the Horton plant for one and one-half years.

Anaconda Copper
REFRIGERATION TUBES
Unusually Soft!
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE *Branch*
General Offices: Waterbury, Conn.
ANACONDA

N.Y. Company Builds Small Range for Apartment Use

NEW YORK CITY — Particularly suited to apartments and homes with small kitchens, a four-model line of portable electric ranges is being manufactured here by Go Electric Corp.

All four models are of the same size, having external height, depth, and width dimensions of 18⅝, 15¼, and 13 in., respectively. With the two side stoves open, total width is 28¼ in. The oven is 11½ in. high, 14 in. deep, and 10 in. wide.

Model variation is in watt capacity and retail price. Models LL and LLA, both operating on a.c. and d.c. and both priced at $34.95, have respective wattages of 1,650 and 1,320. Priced at $39.95 and operating on a.c. only, models ALLD and ALLAD also have respective wattages of 1,650 and 1,320.

Claims made for the range are that it accommodates 6 to 8-lb. roasts, broils big steaks or chops, bakes two loaves of bread at a time, and also boils, fries, stews, and grills.

The range can be plugged into any convenience outlet, and is said to heat up to 400° F. within 10 minutes and to maintain any cooking temperature indefinitely with switch set at "medium."

There is a three-heat reciprocating rotary switch for each of the two side stoves and the main oven, the "high" being the wattage listed and the "medium" and "low" being one half and one quarter respectively of the "high" wattage.

Models ALLD and ALLAD have automatic thermostat oven control and mechanical interlocking load-limiting switches. The other two ranges have the latter switches but are not automatic.

Companion to the line of ranges is a two-model line of ovens with automatic thermostat control. Both ovens are exactly the same size as the ranges, and are provided with a set of accessories, including chromium-plated rack, heat deflector, and cook book.

Model O has a wattage of 1,600 and is priced at $29.95. Model OA has a wattage of 1,320 and also sells for $29.95. Both ovens operate on a.c. current.

Rinehart to Direct Sales Education for Bendix

DAYTON—William Rinehart, who for the past year has been in charge of Kelvinator sales for Graybar Electric Co. here, has resigned to become head of sales educational work for Bendix Products Corp., South Bend, Ind.

Before coming to Graybar to succeed George Bertke, who resigned last year on a Graybar service pension, Mr. Rinehart had been engaged in Pacific Coast operations for Kelvinator Corp.

Bottle Gas Range Buyers Become Profitable Customers

FOND DU LAC, Wis. — When Linden Electric Co. sells a range which uses "bottled" gas as fuel, it is reasonably certain that the purchaser will become a steady gas customer.

For in selecting the brand of bottled gas range which it intended to merchandise, the company deliberately chose one which employed a peculiarly shaped bottle, or container, having valves and attachments permitting the use of no other brand of container. This makes it necessary for the user to bring his container to the Linden Co. for refills.

In addition to its peculiar shape, the container is of a convenient size so that the user can readily bring it in for exchange, instead of having the service truck take the new container to the farmer. This obviates the possibility of the range being rendered useless for an extended period through lack of fuel.

The experience of the Linden Co. in merchandising bottled gas and bottled gas ranges has indicated that these products make a profitable sideline for appliance dealers who contact the farm trade.

Westinghouse Radio Manager Attends Meeting in Cuba

EAST PITTSBURGH — Walter C. Evans, manager of the radio division of Westinghouse Electric & Mfg. Co., recently sailed for Havana, Cuba, to attend the inter-American radio conference. Specific objectives of the conference are to work out uniform policies in connection with broadcasting channels and other radio requirements of the various countries represented, to create a Pan-American technical union for exchange of radio data, and to formulate definite plans to be presented at the International Communications Conference at Cairo, Egypt, in February, 1938.

Nations represented at the Havana conference are Argentina, Bolivia, Brazil, Canada, Chile, Columbia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Newfoundland, Nicaragua, Panama, Paraguay, Peru, United States, Uruguay, and Venezuela.

A regional conference attended by delegates from Canada, Cuba, Mexico, and the United States was held in Havana last March to prepare and study radio matters of common interest which would be brought up at the present meeting.

WATER COOLED INSTANTANEOUSLY AND ONLY AS USED

Water is cooled at the bubbler, only as used, in the Temprite Multiple System of Instantaneous Water Cooling. Hence there are no line losses—no waste of water or time. The first ounce of water drawn is always cold.

Expense of installing, insulating, and maintaining cold water circulating lines is eliminated. You get more cool water per dollar. Each bubbler has individual temperature control—will maintain constant outlet temperature regardless of load, weather or inlet temperature. Write for Bulletin W-2.

TEMPRITE PRODUCTS CORP. *Detroit, Mich.*

TOP PERFORMANCE FITTINGS •

FOR REFRIGERATION AND AIR CONDITIONING ★

● The use of STREAMLINE Solder Fittings assures permanently tight connections for electric refrigeration and air conditioning work. They are absolutely refrigerant and seep-proof. Vibration cannot work them loose. They form a connection actually stronger than the tubing—yet much lighter and more quickly completed, and they reduce materially your fitting cost.

Brass Forgings which have a tensile strength of approximately 60,000 pounds per square inch, are used in the manufacture of our flared tees, elbows, valve bodies, etc. Specially treated drawn brass rod is used for integral parts of valves, flare couplings, fitting caps, etc.

We manufacture the most complete line of valves, fittings (both flare and solder type) and accessories for mechanical refrigeration work. Send for catalog R-3 and Price List 2003.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

★STREAMLINE
TRADE MARK REG. U.S. PAT. OFFICE
COPPER PIPE AND SOLDER FITTINGS

Price Cutting Is Major Problem Facing Belgian Distributors Of Electric Refrigeration

By John Strohm

BRUSSELS—One of the brightest spots on the economic map, where the people speak two languages and are "two beers up" on any other quaffing nation, where dogs pull the milk wagon and refrigeration dealers make more sales than money—that is Belgium.

Wooden shoes, chaperones, and butchers who deal in horse meat are some of Belgium's weaker points. But the thing that gets under the hides of refrigeration dealers is price-cutting, which moves plenty of refrigerators into customers' houses, but doesn't make the cash register ring with as loud a clang as could and should be expected.

All distributors talked of price-cutting; all deplored it; all agreed it was foolish not to set standard prices; and all declared it must stop, or it would spoil the future market as well as the present one.

Here's some shop talk on the subject: One dealer was known to bid up and install a job where he didn't have 1% gross profit . . . Small dealers get into business, sell a few units at low prices, flop, hurt the entire industry . . . Others give eight or 10-year guarantees, go busted, and leave behind a broken refrigerator and dissatisfied customer . . . One firm admitted selling 1,000 domestic units last year, but making no money at all—prices were too low.

Refrigerator dealers have an organization under the Chamber of Commerce, but it is about as potent at setting prices as the League of Nations is at stopping wars. All dealers do not belong.

Belgium is now in a business boom brought on by rearmament throughout Europe and also aided by a natural recovery. Purchasing power has increased on all fronts. The eight and a half million people who live in this Maryland-sized country have a high standard of living, realize the value of refrigeration.

The question is not "Will they buy?" It is "Will they buy from us or somebody else?"

Commercial refrigeration holds the limelight as far as profits are concerned, with butchers filling the role of the prize customer because they are the best credit risk.

Beer coolers are good sellers simply because Belgians are said to drink more per capita than any other people in the world. And no wonder—beer is as low as 75 centimes a glass (about 2 cents). Women send the average up as they hold their own with the male mug drainers. Beer is manufactured locally and also imported from Czechoslovakia and Germany. Several Belgian firms supply beer coolers to restaurants to dispense their beer.

Ice cream cabinets are poor sellers—Belgians look rather coldly upon ice cream as a palate teaser. They regard it on the same social level as the candy sucker, just something for the kids, while the adults drink their beer. Two big Belgian firms manufacture ice cream, but the majority of it is made in the individual pastry shops from prized recipes. Most of it is frozen with brine in rotating sleeves.

ICE CREAM CABINETS

Several dealers report a need for ice cream cabinets equipped with freezing, hardening, and dispensing sleeves all in one job. They complain the U. S. cabinets are too big and too expensive. Frigidaire and General Electric import such cabinets from England to fill this demand.

While there is a possibility the butcher trade will become saturated there are other fields which are practically virgin. Very little has been done with the milk trade—they still vend it from dog carts, pouring out what the customer decides the babies and the family will need for the day.

AMMONIA MANUFACTURERS

Two Belgian manufacturers, Le-Brun and Phoenix, control practically all of the big ammonia plants, and brewery installations, and have recently been branching out into the smaller commercial field. Cheap labor of five francs an hour (one franc—3½ cents), cheap materials, and wooden cabinets enable Belgian manufacturers to furnish keen competition for American products. Kelvinator, Frigidaire, and General Electric lead in the sale of smaller commercial refrigeration units.

American makes and Electrolux control the household market almost exclusively. Electrolux has a near monopoly in apartment house installations with Norge a runner-up, while Frigidaire and General Electric and Westinghouse head the sale of individual units.

MARKET DEVELOPING SLOWLY

Although sales are good, the market is increasing but slowly and is far behind the purchasing power of the people. Reasons given for slow sales: They live in old homes with cellars; people with money spend summers at beach or in the country; rather cool climate; few rich people; buyers consider it a luxury, to be paid for in cash.

A local company tried to manufacture household units, stamping steel cabinets and making their own compressors, but it proved impractical on such a small scale and was discontinued. Belgians are great on woodwork, and now kitchen cabinet makers have included small refrigeration units built into the furniture which they sell. Through inferior insulation and use of wood, these cabinets sell much cheaper, hurt the sales of good household cabinets.

Air-conditioning sales are small with only fair prospects for the near future. Westinghouse is the unchallenged leader, other firms making but few installations. Dealers predict slow expansion of air conditioning because: costs too much; climate is cool; people for whom it is meant go to the seashore; people must first be educated to what it is and what it will do.

Belgians are much like the French—they don't care so much whether the air they breathe is fresh and of the right temperature. Distributors report architects are constantly inquiring and talking price, then backing out. Industrial plants for treating tobacco and manufacturing photographic equipment are now installing air-conditioning equipment, and a ready market lies in this industrial field.

There are on quotas on refrigeration imports and the duty is quite nominal, according to U. S. Commercial Attache Tom Hughes. Here are the rates:

Kilos			Francs Per 100 Kilos
50,000	and	over	40
5,000	to	10,000	52
2,500	to	5,000	64
1,000	to	2,500	72
500	to	1,000	96
250	to	500	112
100	to	250	140
50	to	100	175
0	to	50	195

Household appliances are widely used. The vacuum cleaner market is practically saturated, however, with German makes and Electrolux. Despite the fact that a stove which burns residue coal has just been marketed with huge success lately, there is also a good demand for electric ranges. Belgian manufacturers pooled their resources for an advertising and promotional campaign in 1935, sold 9,000 ranges.

A great number of electric irons are sold but domestic help is too cheap for electric washers to find a ready market. Moreover, the Belgian housewife likes a washing machine equipped with a water heating apparatus, according to the Fairbanks-Morse dealer.

Power companies are maintaining rather high electric rates in order to cover the cost of changing from direct to alternating current. Belgium was one of the first countries electrified, consequently there is much direct current today even in Brussels. Rates are as high as 3.5 or 4 francs per kilowatt, but when the user guarantees to take so much it is as low as 35 centimes per kilowatt. Power companies encourage the use of household appliances through special rates and free installations.

The Belgian government is very stable, and the country is peopled by an industrious population. Credit is good and many refrigerators are sold on an easy payment plan provided by a government agency which gives five years credit, assumes all risk, and charges 5 or 6% interest. This agency meets a decided need, and finances a great deal of instalment buying.

In social legislation Belgium is far ahead of the U. S. and many countries in Europe. Two weeks vacation go to all employes. They get the courtesy of six weeks' notice before being fired, as well as two afternoons off a week to look for work. Furthermore, the employer must give them a good recommendation, and is not allowed to say nasty things about them. They have old age pensions, unemployment insurance, and sick benefits — paid by employe-employer contributions.

"There is more talk and worry of a European war in the United States than in Belgium," observed one dealer. Nevertheless Belgium is not easily reassured by Germany that she won't be violated again. She has

(*Concluded on Page 17, Column 1*)

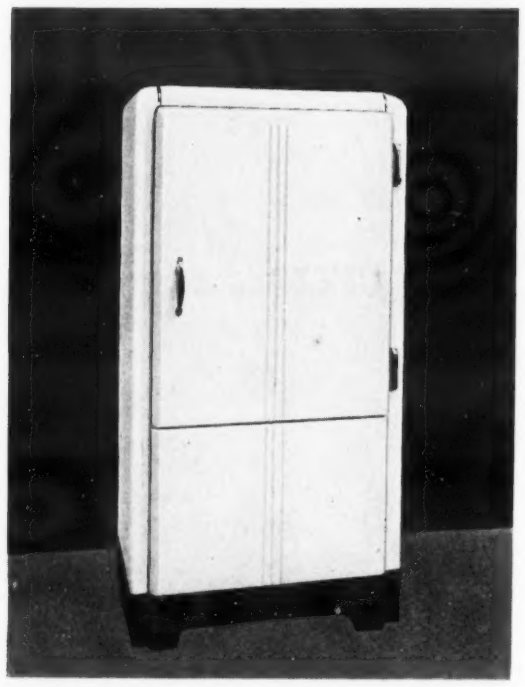
Belgium - - A Good Market, But Dealers Have Their Problems

Belgium is one of the "brightest spots on the economic map," and refrigeration dealers are reporting pretty fair sales, but are complaining about the profit they make. So says John Strohm, world-touring journalist, who has been writing for AIR CONDITIONING AND REFRIGERATION NEWS on the market possibilities in the various countries which he has visited.

Mr. Strohm also reports in detail about the opportunities and requirements in the various divisions of the commercial refrigeration market in a country which is apparently prospering.

HOUSEHOLD CABINETS

STANDARD MODELS or BUILT-TO-ORDER



• *FEATURING*

DISTINCTIVE STYLING—BONDERIZED ALL-STEEL CONSTRUCTION—BALSAM WOOL INSULATION—DULUX HIGH BAKE FINISH—PORCELAIN INTERIOR

MIDWEST STAMPING & ENAMELING COMPANY
GALESBURG, ILLINOIS

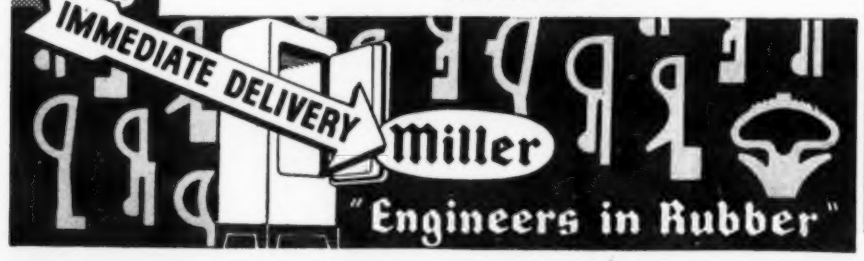
Don't Close the Door to EXTRA PROFITS

★ Don't forget to check the door gaskets when you service a refrigerator—particularly if it is five years or more old. The efficiency of thousands of refrigerators is threatened, today, because of time-worn gaskets. If you are on the lookout for extra profits, now is the time to capitalize on this new and ever-growing replacement business.

No costly equipment or material stocks are required. The simplified Miller line of 20 gasket types enables you to service 80% of all refrigerators ever made. Order them according to your needs. Complete warehouse stock insures immediate delivery.

As the first step towards getting your share of this profitable business, send for illustrated price list. If your local jobber cannot supply you, write direct.

THE MILLER RUBBER COMPANY, INC.
Akron, Ohio



TAG *Snapon Controls* FOR REPLACEMENT *profits*

For Domestic Refrigerators, Water Coolers and Beverage Coolers, TAG Snapon Controls with overload protection, fit your service jobs perfectly and profitably. Once adjusted, they permanently retain their temperature setting. Once set, the mechanism is locked against creeping. Send for the 1937 TAG Snapon Control Catalog No. 1136-25. It contains other test equipment for refrigerator service that you should know about.

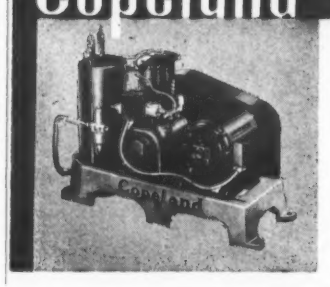
ASK YOUR JOBBER ABOUT TAG SNAPON CONTROLS AND TEST EQUIPMENT

C. J. TAGLIABUE MFG. CO.
Park & Nostrand Aves.
Brooklyn, N. Y.

Send for CATALOG

Gentlemen: Please send me a copy of the 1937 TAG Snapon Control Catalog No. 1136-25.
Name.....
Address.....
City & State.....

The Distributor Who Sells the
Copeland REFRIGERATION LINE



IS BUILDING GOOD-WILL FOR YEARS TO COME!

It is just good business foresight to sell your customers a quality-built Copeland product. Whether you sell a Copeland Household Refrigerator, Commercial Refrigeration, Washer or Ironer, you are wisely building up a backlog of long-time customer satisfaction that will pay you dividends in continued patronage for many years.

Write for Sales Plan
COPELAND REFRIGERATION CORPORATION
Holden Ave. at Lincoln—Detroit

"TRIPLE TROUGH" BY KRAMER

1 Unusually deep primary trough.
2 Air insulated second trough.
3 Air insulated third trough designed to act as a final precaution against any drip.

The Ultimate in Temperators

POSITIVE DRIP PREVENTION

Write for Bulletin No. 237.

TRENTON AUTO RADIATOR WORKS, Trenton, N.J. NEW YORK PITTSBURGH

Belgian Refrigeration Dealers Decry Price Cutting Practices

(Concluded from Page 16, Column 5)

fortified her frontier and instituted compulsory military service.

Belgium has two official languages, French and Flemish, and they are great trouble-makers. There is much dissension between the two groups, some of the Flemish going so far as to hope for re-annexation to the Netherlands. If a dealer makes a bid in French on a refrigeration installation for a Flemish business firm, the bid will probably go into the waste basket, and vice versa.

Nice girls don't go out even in broad daylight with a man unless her mother or another capable chaperone goes along. This apron string restriction, according to one refrigeration dealer, hurts the ice cream parlor business. "A man doesn't like to drag mothers around in public places—or private either for that matter," he declared.

The Belgian Congo in South Africa is a colony with great potentialities—it is so big they scarcely know where to begin in developing it. According to the commercial attache, it comprises one of our biggest foreign auto markets, and is also absorbing large numbers of refrigerators as electric power is introduced.

Belgium is densely populated, 704 people to the square mile. The mean temperature is about 49° F. with an average annual maximum of 89° and a minimum of 9° F. The annual rainfall is about 35 inches.

Antwerp is the chief port, possessing free port facilities which permit goods to be imported into Antwerp for re-export. This gives a distinct advantage to American firms which desire to keep stock in bond for re-export to various parts of Europe. Belgian imports from the U. S. totaled $44,625,000 in 1936 and consisted mainly of automobiles and their parts, cotton, petroleum products, oilseed cakes, lumber, tobacco, typewriters, fresh apples, dried fruits, canned goods, naval stores and tires. Exports to the U. S. amounted to $6,375,700 and consisted of cut diamonds, textiles, iron and steel products, rough diamonds, rabbit skins, crude copper, chemicals, cement, and fertilizers.

Electrolux Dealer Sees Good Market in 20 Years

"Refrigeration dealers should now be selling 10 times as many units as at present, based upon the purchasing power of the people! But we won't do that before twenty years," declared the Electrolux manager in Brussels.

"And that is the reason why we should all stick together now and not kill each other off through price-cutting and unfair competition. It's dangerous for companies not to look ahead—agents don't care because they are usually short-lived, while the company goes on."

He was loud in his condemnation of price cutting and failure of the companies to establish standard prices. "In other countries where we have 50 competitors, we have organizations to observe standard prices. And yet here in this country with about six competitors who rate the name, we don't do it. And all because one firm refuses!" (Although he mentioned no names, he doubtless referred to the Frigidaire dealer who is not a member of the Chamber of Commerce organization for refrigeration dealers.)

Going back to his original point that sales should be greater, he points out that there are still fewer refrigerators in Belgium with 8½ million people than in the city of Stockholm alone, a city of half a million. Yet Electrolux spends 10 times as much in Belgium for publicity.

Electrolux almost completely monopolizes the apartment house market, installing three-foot boxes. But they also sell more big ones here than in such wealthy countries as England where many one and two cubic foot units are sold—in Belgium they are a luxury product. If a customer can afford to buy one, he usually can afford to buy a big one.

Societe d' Electricite Tells Of Ice Cream Cabinet Need

A need which U. S. manufacturers fail to meet is an ice cream cabinet containing freezing, hardening, and dispensing sleeves in one job, according to the Societe d'Electricite at de Mechaniques which handles General Electric products.

"Cafe owners want cabinets only large enough to handle 10 or 15 gallons daily, and the only place we can get such a cabinet is from England," reports Walter Pichel.

He told of trying to sell a cabinet to a cafe owner who was using the old brine freezing method. "You are selling solid cream with all of this stirring," he told him. "American ice cream contains more air, more profit."

"We don't sell air—we give people their money's worth!" was the answer.

General Electric leads in the sale of domestic units in the Belgian Congo, because of a hook-up with the power companies. Many of the 100,000 whites will buy refrigeration as soon as power lines are built.

SEM finds commercial refrigeration more of a money maker than their household line. "The household unit is still a luxury for the people who have cash, while commercial refrigeration is a common sense investment."

Butchers are the best customers because they have money and are good credit risks. "We never lose our money on a butcher, while we must be careful with restaurants," according to Mr. Pichel.

SEM equipped Sarma, Belgium's largest chain store system, with refrigeration equipment and air-conditioned butcher storage. This chain system, which bought in huge lots, outsold the little fellow, was the big reason why the government recently passed legislation outlawing further expansion of chain stores, and even forbidding the addition of a new department in a department store.

The four-foot box is the most popular, SEM finds. They believe many inferior installations are made in new buildings simply because the contractor wants to hang up a sign reading, **"Equipped with electric refrigeration,"** not caring about the quality or the size.

SEM has a factory in Ghent with 3,000 employes making all kinds of electrical apparatus. They hold the exclusive franchise for General Electric equipment, and also use some of its patents in manufacturing.

Sofrigo Finds Business Good But Prices Very Poor

Sofrigo, which holds the franchise for the German ATE in Belgium, Luxemburg, Northern France, and Southern Holland, finds business very good, but prices extremely poor.

"In Germany units which sell for 1,500 marks must be sold for as low as 1,000 marks here. And lately on one installation we made a bid, to find it considered along with 14 others," declared Manager Hugo Lawy.

He pointed out that Belgian manufacturers offered cheap competition because of low wages, under selling, and cheaper materials than were found in Germany and the United States, whose goods were more or less on the same price level.

He finds the market for beer coolers poor because many are supplied by a Belgian beer firm to the customers who buy its beer.

The Holland and French markets he finds better than the Belgian, but the duty is higher, and the unstable French franc makes it rather dangerous to sell there now.

Mr. Lawy says living is 35% cheaper in Belgium than in Germany, but they are not so advanced technically. Belgian engineers never think of putting on overalls.

Sofrigo plans to get its share of the air-conditioning business which they believe will be had for the selling in a year or two. They advertise little, and that in trade journals. "Salesmen are the best advertising medium." He is not overly enthused about Belgian salesmen, declaring if a salesman sold his quota in the first three days of the month, he would do nothing for the other 27 days.

Frigidaire Business Increases Without Profit

Frigidaire finds a good market with a 20% increase in business, but with prices so poor they leave small profits. "Business was good for the first six months, but down the last three because the stock market was low and the Belgians have been playing it," according to J. J. Cousan, sales manager.

Frigidaire has pioneered the milk installation field, but reports the people are hard to sell on price, always wanting to pay a bit less. The firm has made only three air-conditioning installations in the past five years, a restaurant and two offices, but they intend to press sales in the next year.

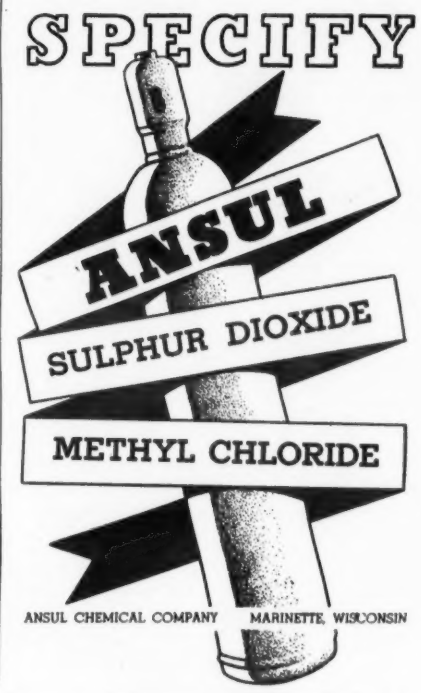
Mr. Cousan reported the breweries often furnished ice free to customers who buy their beer. And in the summer they often forget the little fellow out in the country. However, this free ice holds back the sale of electric refrigeration but little.

Weather and Business Worry Westinghouse Dealer

The Westinghouse dealer was gloomy about the business future and the weather—the writer could understand the latter after three days of wading through pouring rain.

"The weather man has changed considerably in the past 25 years. Now when it is supposed to be cold, it doesn't even snow. And in the summer time it is cool and rains."

He attributed the present economic boom in Belgium to rearmament, particularly Great Britain's eight billion dollar program which is throwing much work to Belgian factories.



Joe's in the Middle

BUT HE'S NOT ALWAYS TO BLAME FOR CLOGGED VALVES!

He's a good serviceman, who does an O. K. job. It's unjust to say that all clogged refrigerator valves are caused by his mistakes.

Actually, the moisture that causes the trouble probably had been trapped in the intricate passages of the mechanism despite the most careful baking and subsequent handling at the factory.

The problem is solved by using Activated Alumina. Activated Alumina *adsorbs* moisture, takes up and holds the last trouble-making trace of water. For servicing, cartridges of Activated Alumina for temporary insertion in the refrigeration system are supplied by several manufacturers. By circulating the refrigerant through the cartridge, moisture is permanently removed. Even better, some makers of refrigerators are now building cartridges permanently into the equipment, as lasting, inexpensive prevention of trouble.

ALUMINUM ORE COMPANY.
Sales Agent: ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pennsylvania.

ALORCO

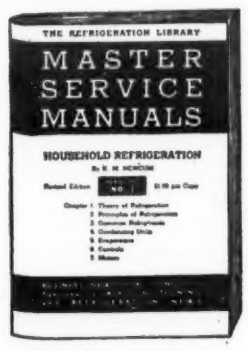
ACTIVATED ALUMINA

PREVENTS CLOGGED REFRIGERATOR VALVES

MASTER SERVICE MANUALS

By K. M. Newcum

Household Refrigeration



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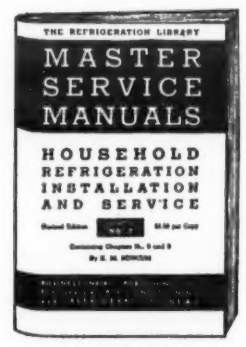

Household Manual No. 2

MANUAL NO. 2—Diagrams show how to distinguish the difference between the fundamental types of systems. Detailed instructions regarding the proper methods of installing and servicing each type. This book is a comprehensive guide to the servicing of all the popular makes of household electric refrigerators. 128 pages. Price $1.00.

Household Manual No. 3

MANUAL NO. 3—Detailed information regarding methods of servicing several special types of refrigerators (now classified as "orphan makes" because production of these models has been discontinued) including Allison, ElectrICE, Holmes, U. S. Hermetic, Majestic Hermetic, Majestic Conventional, Socold, Iroquois, and Welsbach. 144 pages. Price $1.00.

Master Service Manuals on HOUSEHOLD refrigeration, installation and service provide a complete and inexpensive course of study for the beginner and valuable reference books for the experienced service man. The author, K. M. Newcum has taught classes of beginners and advanced students at David G. Rankin School of Mechanical Trades, St. Louis, Mo. and West Side Y. M. C. A., New York, N. Y.

Master Service Manuals are now being used as textbooks by Technicians Institute, 244 N. 14th St., New York City; Universal Refrigeration and Air Conditioning School, 352 Fourth Ave., New York, N. Y.; Humboldt Adult Educational Center, 314 E. Ferry, Buffalo, N. Y.; Louisville Institute of Technology, Louisville, Ky.; Hower Trade Evening School, Akron, Ohio, and other trade and technical schools.

BUSINESS NEWS PUBLISHING CO., 5229 Cass Ave., Detroit, Michigan

Ruthenburg Warns of Dangers in Setting Arbitrary Money Wages And Working Hours

An Address by Louis Ruthenburg, President, Servel, Inc.
Delivered Before the Evansville (Ind.) Kiwanis Club, Nov. 4, 1937

PROFIT AND LOSS statements, balance sheets, sales accomplishment, productive efficiency of industry are by-products of industrial relations. They are indicators of management's ability to deal with human beings. As Merle Thorpe recently said, "Business is not an abstraction. It is flesh and blood, men and women; not machines, but human beings with spirits and emotions subject to dejection or elation."

When you hear the expression "industrial relations" your thoughts naturally turn to the relationship between industrial employes and industrial management because for several years that particular relationship has been constantly and emphatically stressed to the exclusion of other equally important relationships.

It is becoming increasingly apparent that the most sincere friends of labor must consider industrial relationships in a much more comprehensive sense, if labor is to achieve the more abundant life and if the condition of those millions who lack a decent standard of living is to be improved.

In this particular discussion of industrial relations it is my purpose to consider the broad aspects of industrial relations, but with the welfare of the industrial employe uppermost in mind.

SPECIAL GROUP INTERESTS

Any broad consideration of industrial relations must take into account the interests of several more or less distinct groups. Very obviously the interests of the customer must be carefully considered. Unless the customer is served satisfactorily, and according to his own standards, neither legislative remedies, group pressures nor any force whatsoever can serve the worker's ultimate interest. Management must recognize service to the consumer as its first duty in the process of serving the interests of the people on the payroll.

The stockholders must be served; otherwise the people on the payroll will suffer. The stockholder is entitled first to protection of his investment and second to a reasonable return thereon.

Industrial relationships must also comprehend service of the interests of sales intermediaries—distributors, jobbers, merchants, dealers, and their sales forces. Unless the interests of this great group are adequately served, the bridge between production and consumption may be wrecked, and wreckage of that structure must result in serious harm to the people on industry's payroll.

You see, the interests of these several groups are closely related, mutual interests, and the prosperity of any one of the groups can be preserved only by maintaining a delicate balance among all groups. This equilibrium can be insured only in the degree to which the interests of all groups are fairly served.

In reality, we cannot think of ourselves as members of definite groups. Like troupers of the old school, who "doubled in brass" and appeared now on the stage and then in the band, we adopt the consumer attitude as we buy, the employe attitude when we work, the investor attitude when we choose a savings bank, purchase an insurance policy, a bond, or a stock.

Most of us are members of at least two of these groups. Some of us are members of all. We are all consumers from the day of our birth to the day of our death. Most of us are employes—people on the payroll. Many of us belong to the great army of sales intermediaries, and those of us who participate in the ownership of business as stockholders or partners constitute, in this country, a large percentage of the population.

HOW THE GROUP MIND WORKS

Now let's see how our minds are working as consumers, employes, sales intermediaries and capitalists.

As consumers we are greatly concerned because prices are rising. The cost of living is advancing. Rents are going up, and the price of beefsteaks is terribly high. Perhaps we have recently decided against purchasing certain things that we want because our incomes will not buy as much as they would have bought a year ago.

Our reaction as consumers naturally have much to do with our attitude as employes. We want more money, not only to meet increasing costs but constantly to improve our standard of living.

If we belong in the third group of sales intermediaries we are constantly concerned with the attitude of consumers—how can they be induced to buy more? As salesmen and merchants we want to see incresed buying power and optimism. We want to see prices reduced, but we also want to see our own commissions and mark-ups increased.

CONDITIONS OF INVESTMENTS

As partners and stockholders we are very much worried by the recent decline in the stock market. We are fearful for the stability of our investments. Some of us have paper losses. Those less fortunate have actual losses. We hope that the earnings of the concerns in which we are interested will be maintained or increased primarily because we hope that our investments will not shrink in value but also because we want larger dividends.

As consumers, employes, salesmen or owners we all know that when conditions become sufficiently intolerable we may refuse to cooperate. That is the inalienable right of any group. Buyers' strikes and strikes of capital may exert economic pressures just as effective as strikes of labor.

Failure of one group to cooperate frequently causes other groups to strike. During the past year we have witnessed widespread restlessness and acts of non-cooperation on the part of labor. Now our financial reporters make frequent mention of strikes of capital.

In the November Monthly Stock Digest I find this expression: "Capital is on a sit-down strike because the cool, logical calculation of a sound investor dictates that an individual of large income is unwise to buy common stocks today."

GROUPS DEFEND THEIR INTEREST

When prices advanced rapidly in 1920 we had a well defined buyers' strike. Most of you will remember the "overall craze" which was simply a buyer's strike induced by the rapid rise in the price of clothing. It must be clearly apparent that all of the groups at interest must feel that their rights are being respected and that their interests are being served if we are to enjoy a balanced economy and if the condition of the worker is to be improved.

It follows, therefore, that if any one of these vitally important groups insists upon obtaining an advantage that can be had only at the expense of other groups, such short-sighted selfishness can result only in failure of the pressure group to attain its own objectives.

When customers force the producer to sell upon terms which prevent the payment of fair wages and the maintenance of good working conditions and under conditions which will not insure a reasonable profit to capital, they defeat their own purpose by destroying the industry which served them.

If the stockholder exacts profits so high that the interests of consumer and worker are jeopardized, he simply destroys the value of his investment and kills the goose from which he tried to squeeze too many golden eggs.

By the same token, when labor assumes that the only limit to its compensation is measured by the amount of force it can apply, labor loses the cooperation of consumer and capital and fouls the nest of labor.

Our primary consideration in this discussion is the interest of the people on the payroll. We all agree, I think, that our own future prosperity will be enhanced in the degree to which we can bring about a higher living standard for all of our citizens and particularly for those whose incomes are now inadequate to give them a satisfactory living standard as citizens and satisfactory buying power as consumers. There is no question as to objective. Please bear in mind, however, that it is much easier to define acceptable objectives than to discover means of attaining them.

MISCHIEVOUS AMERICAN TRAITS

Having agreed upon a universally acceptable objective and before we consider methods of attaining that objective, it may be well to discuss frankly two interesting traits of the American people which have been well demonstrated in recent years.

One of these traits is extremely superficial thinking. As a people we enthusiastically accept and applaud the statement of obviously desirable objectives, but we are so preoccupied with our daily affairs that we fail to examine critically the methods which are proposed for attaining these objectives, even though the methods proposed may be the ones which will most surely defeat the attainment of the desirable objectives.

Another interesting and mischievous American trait is this. We observe that certain desirable objectives are being gradually approached by constructive, evolutionary processes, and just about the time that the evolutionary process has made measurable progress, a group of noisy enthusiasts decides to accelerate the process by legislative action which not only fails to accomplish the desired result but upsets the evolutionary process and retards our normal progress toward the desired objective.

May I illustrate this quaint tendency by referring to our experience with prohibition? At a time when temperance with respect to the consumption of alcoholic beverages was making slow but very definite progress, some of us got "ants in our pants." Prohibition resulted. We spent many millions in attempted enforcement, we induced a crime wave of terrific proportions, and after years of experience with this noble but costly experiment we decided that we were all wrong and that we could not successfully control this particular kind of human cussedness by legislation. After repeal we find that we probably have postponed the normal development of temperance by some 50 years.

IGNORING PAST EXPERIENCE

We seem, however, to have learned nothing fundamental as a result of our experience with prohibition, because just as we repealed prohibition we entered into a magnificent scheme and enacted a multitude of laws designed to bring about legislative control, not merely of one bad human habit, but of virtually all business activity in the United States!

Among other things we had the N.R.A., which didn't work simply because it couldn't work. But, again unimpressed by the failure of this experiment, a wage and hour bill is now proposed which probably will include most of the things which our N.R.A. experience demonstrated to be impossible of successful execution. Please keep in mind these two American traits as we discuss means by which the American standard of living may be improved.

Higher wages and shorter hours are the yard sticks by which we measure improvement in the worker's condition in this country. If we are to think realistically about living standards we must think about real wages—what money will buy—rather than in terms of money wage which is meaningless unless it is interpreted in terms of buying power.

Measured by these criteria of real wages and working hours we have made remarkable progress in improving the condition of the common man in this country. The real wage of the American workman has increased consistently and substantially until his living standard is the highest ever achieved in the world's history.

Comparisons with living standards in both the democracies and dictatorships of Europe indicate that the American way of life has brought incomparably greater material benefits than those attainable under other ways of life.

All of us who were born in the late '80's or the early '90's recall the time when the standard work week was 60 hours; when anyone who expected a Saturday afternoon off was considered a sissy; when we literally followed the Biblical injunction—"six days shalt thou labor." By a constructive, evolutionary process the work week reduced from 60 hours to something in the order of 48 or 50 as of 1929.

SECURING CONTINUED IMPROVEMENT

Now these great improvements in the condition of the American workman have resulted from a well defined, constructive, evolutionary process that should be quite generally and clearly understood. By supplementing man power with mechanical power, by the invention of time saving machinery, by learning more effective working relationships, the productive capacity per unit of man power has been multiplied.

Goods have been produced at lower cost. Markets have expanded. As the national income has increased, our workmen have received rich dividends in the form of increased real wages and reduced hours of labor.

There is every indication that the process can be continued unless it is subject to arbitrary interference. Any influence which has the effect of restricting productive capacity per unit of man power will restrict our ability to improve the living standard of the average man. Carried far enough, such restrictive influences must necessarily reduce the national living standard.

Arbitrary increases of the money wage; arbitrary reductions of working hours, without corresponding increases in productive efficiency; deliberate restriction of production are the measures which cannot fail to reduce American living standards. Unfortunately it is precisely these measures that are now being imposed upon American industry by legislation and by group pressure.

The objective of the more abundant life is universally applauded. The methods which are now attempted will not only fail to accomplish the

(Concluded on Page 19, Column 1)

What Are 'Real Wages' and How Are They Obtained?

The complete text of Mr. Ruthenburg's address is published in this issue of AIR CONDITIONING AND REFRIGERATION NEWS for the reason that it offers one of the clearest and best-expressed viewpoints on the whole subject of relations between capital and labor by a man who is well-regarded in industry for his views on industrial management.

It is the type of address that should be read by the laborer, rather than by the management. However, there is much in it that should be of value to executives who are dealing with the labor problem.

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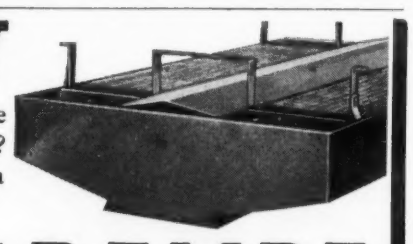

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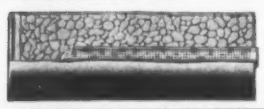

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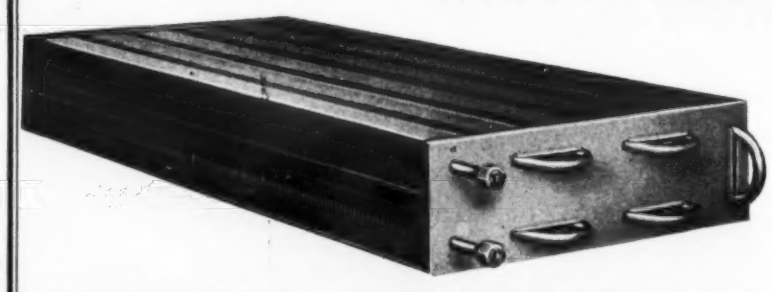

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Questions Labor Should Consider before Selecting Collective Bargaining Agency

(*Concluded from Page 18, Column 5*)

objective but will of necessity defeat its attainment and inevitably bring about reduced living standards. This should be as readily understood as the simplest arithmetic equation.

We cannot have more than we produce. In the degree to which production is restricted we have less to divide. Except in a most temporary sense, the money wage is meaningless because its buying capacity, in the presence of restricted production, must be reduced by rising prices faster than the money wage can be increased.

SOME POPULAR FALLACIES

It has been said repeatedly that the minimum wage for a proper standard of living in this country should be $2,500 annually. It has also been said that the American family, in order to live the more abundant life, should have a minimum income of $3,600 annually.

No doubt these statements have created a profound impression upon many short-sighted people. Two comments seem to be in order.

First, $2,500 as an average wage or $3,600 as a family income means absolutely nothing unless we consider the buying power of those incomes, and, if prices increase faster than income, it is conceivable that $2,500 will ultimately buy less of the world's goods than $1,000 does today. To prove this we need only refresh our world war memories.

Next, one may well believe that the means by which these objectives are to be attained are more important than the simple announcement of a desirable objective. There are approximately 40 million people gainfully employed in the United States. To attain an average—not a minimum—wage of $2,500 annually would therefore require an annual national income substantially in excess of 100 billion dollars. Our total annual national income is currently in the order of 60 billions. Our highest national income, attained in 1928, was slightly less than 90 billions.

We might just as well agree that the minimum wage should be $5,000 annually. The real problem is un*changed*. How can we increase the *national* income so that we shall have *more* to divide? Certainly it will not be done by restriction of output, because the only way we have ever found of increasing national income has been by ever increasing output per unit of man power.

"TOO HOT TO PRINT"

Among our basic industries are several which are the cause of deep concern these days. Please consider, for example, railway transportation and building construction. Paul Mallon's column on Nov. 2 carried the following interesting comment on what happened at the recent railroad presidents' meeting in Chicago:

> "The news that came out of the railroad presidents' meeting in Chicago did not fill two sticks on the stock market page, but the report they suppressed would have made headlines.
>
> "It seems the rail chiefs considered a report on their troubles called 'The Crisis.' It was prepared by the experts of the Association of American Railroads. The chiefs thought it too hot to print, are having it toned down.
>
> "What it said was rail costs have been boosted tremendously by new tax laws, by increasing prices of things the railroads must buy, by wage advances. The total rise in costs was computed at $663,303,000 annually, of which $111,000,000 represents new federal taxes (unemployment compensation, railroad retirement act and tax on wage increases).
>
> "Ninety-six railroads are in the hands of receivers. These lines operate 28% of the total mileage of the country. Two million persons own railroad stock. The roads buy 23% of all bituminous coal mined; 19% of fuel oil production; 17% of iron and steel production; 20% of cut timber.
>
> "What they are leading up to, of course, is an increase in freight rates. But an increase of 15% would only increase their revenues $600,000,000 a year which is less than their computed cost rise."

CAUSED BY ARBITRARY WAGE INCREASE

How does it happen that the railways are in such dire straits? How does it happen that, as a nation, we must bear these burdensome increases in transportation costs? An examination of American railway history discloses the fact that for years railway labor, with the cooperation of governmental agencies, has arbitrarily reduced hours of work, arbitrarily increased rates of pay, thereby increasing costs, without corresponding increase in operating efficiency. Many well informed people believe that our American railways are headed inevitably from government control into government ownership; that socialization of rail transportation in the United States is inevitable.

Railway transportation costs are widely distributed. The proposed rate increase will impose an added annual charge of $20 per family—$20 less with which to buy other things!

WHY BUILDING OPERATIONS HAVE LAGGED

Recovery has been impeded because building operations have sadly lagged. Here we find an industry which has not had the benefits of mass production and which has for many years conceded arbitrary reduction of hours, arbitrary wage increases, and in which production has been definitely restricted. It costs too much to build houses. The housing problem is an increasingly serious national headache.

Only three material things are absolutely essential—food, clothing, and shelter. The average man cannot acquire a satisfactory house either by purchase or rental, notwithstanding the fact that after making ample provision for food and clothing, he successfully finances the purchase of an automobile, a radio, perhaps an automatic refrigerator. He can purchase all manner of luxuries produced by benefit of mass production, but a satisfactory dwelling—essentially unchanged in methods of construction for hundreds of years—its cost determined by restrictive rules of production, remains beyond his reach. Who suffers more from this condition than the building trades?

ALTERNATIVES OPEN

Students of the housing situation tell us that satisfactory housing can be provided only by following one or two alternatives—the successful development of factory-built homes, or by socialization of housing. The latter course is being followed by several European countries which have financed their socialized housing with borrowed American money which has not been repaid.

If such basic industries as railway transportation, building construction and coal mining have been forced to the wall by the unsound practices which we now propose to apply to all industry, is it not reasonable to believe that either we must reverse the present trend or look forward to similar difficulties in all industry? Or don't we care a damn?

Economic and social improvement can be continued only in the degree to which we can increase the *real* wage of the common man. Among our public enemies, the industrial manager who pays starvation wages and the labor union which restricts production are equally guilty. Both attack the *real* wage. The one by holding down the monetary wage; the other by reducing its purchasing power.

EXAMINATION OF COLLECTIVE BARGAINING

Very generally accepted as a means of improving the lot of the working man is the principle of collective bargaining. Is it not possible that we have again accepted a principle without critical examination of its implications? The Wagner law provides, in effect, that employe groups may engage in collective bargaining through agencies of their choice.

Consumers, investors and other groups that form industry's partnership with labor will be very definitely affected by this choice of a bargaining agency. Is it not reasonable—yes, essential—that consumers, investors and those engaged in the sales process, as well as labor, should be interested in considering the qualifications of the bargaining agency?

Before labor selects its bargaining agency, should it not be counseled by its partner groups to make a critical examination of the proposed bargaining agency by asking such pertinent question as these:

* * *

1. *Is the proposed bargaining agency a responsible organization?* If it is found that the proposed bargaining agency, after entering into a contract with a responsible corporation, has been unable to prevent interruption of production by some hundreds of unauthorized strikes within a few months after signing the agreement, the responsibility of that organization is questionable.

Mr. Knudsen, president of General Motors, recently said, "We have instances in which the grievances of a dozen men have caused 5,000 men to lose three or four days' pay." Would you recommend such a bargaining agency to your friends on industry's payroll?

* * *

2. *Is the proposed bargaining agency essentially communistic?* If we find that the agency is endorsed by the Communist Party U.S.A. and that there are many avowed communists among its policy-making officers, one might seriously question whether an agency with such a background is qualified to serve the ultimate interests of American workmen who presumably do not want to see the American form of government replaced by a dictatorship of the proletariat.

* * *

3. *Has the proposed bargaining agency established a record of violence and lawlessness?* Most American workmen are law-abiding citizens, and, wishing to have their lawful rights respected, do not care to become members of an organization which attempts to gain its ends by violent and lawless methods.

* * *

4. *Are the closed shop and check-off known to be objectives of the proposed bargaining agency?* Under closed shop conditions all employes must be members of a given union, and under the check-off, they cannot escape the payment of dues because the employer is required to deduct dues payable to union officials before issuing pay checks. American citizens have always objected to coercion and to taxation without representation. The closed shop and check-off would seem to constitute a joint action of coercion on the part of the employer and the union.

* * *

5. *Do the representatives of the proposed bargaining agency have a sympathetic understanding of the problems of the business in which the employes and other groups have a joint interest?*

* * *

6. *Do they realize that the ultimate interests of the workers cannot be served unless the equitable rights of customers and stockholders are also served?*

* * *

7. *Does the bargaining agency embrace the fallacious notion that national living standards can be improved by arbitrary increase in wages, arbitrary shortening of hours, without corresponding increases in productive efficiency?*

* * *

8. *Has the proposed bargaining agency encouraged restriction of production?*

COLLECTIVE BARGAINING AND EDUCATION

Collective bargaining is a principle entirely consistent with our democratic ideals, but many years of patient education may be required before collective bargaining agencies can be developed which will effectively serve the interests of the working group by bringing about a higher living standard. Perhaps this ideal is impossible of accomplishment.

We shall all suffer while this experiment runs its course—the working group most of all—and in the degree to which bargaining agencies insist upon arbitrary increase in wages, arbitrary reduction of hours and restriction of output, and in the degree to which interruption of production develops from resultant disputes.

Labor's earnings lost in strikes cuts two ways. The immediate loss is extremely serious, but the destruction of general business activity and of public confidence is vastly more expensive.

It is said that 4,500,000 man days were lost last June through labor disputes. At the rate of $5 per day that means an unnecessary loss of $22,500,000 in wages for one month—a serious loss to the nation's buying power—a serious reduction in the living standard. Who can say how much of the current recession of business is traceable to the economic pressures and fears induced by those same costly disputes?

DESTRUCTIVE TAXATION

Taxes add enormously to current costs and thereby reduce the living standard. In 1937 Servel, Inc., for example, will pay taxes, including the refrigerator excise tax, amounting to almost 10% of total Servel sales—almost 40% of the entire Servel payroll. Hidden taxes are said to cost the $18 per week man without property 12 cents in the dollar, reducing his wage to $15.84.

While current taxes are an extremely serious element in our cost of living, those taxes which discourage the investment of capital may easily be disastrous. Under the tax on undistributed profits and the tax on capital gain, investors withdraw their support from industry and seek protection in the purchase of tax-free bonds.

If these unsuccessful and hazardous experiments in the field of taxation can be quickly discontinued; if "we, the people" now insist on real governmental economy and balancing of the budget;—above everything—if industrial management is permitted a reasonable degree of freedom to continue increasing productive efficiency, we can gradually reduce the national debt, bringing about material relief of the tax burden and move on toward the actual attainment of a constantly improved living standard for the common man.

Our difficulties will not be effectively relieved by damning our public servants. We, the people, elected them to office. True, we find emotional relief in personalizing our devils—just as politicians gain public support by the same process. But when we are afflicted by well nigh intolerable political pimples, most of us know that these are merely symptoms of a disordered national blood-stream and that our energies and resources should be concentrated upon curing the disease rather than upon cursing its symptoms.

As a nation we can achieve great and lasting prosperity if we, the people, are sufficiently interested to insist upon the application of proven and tried methods for attaining those objectives which we all so readily accept.

Those objectives will not be attained by personalizing and damning our devils, by fomenting class antipathies, by arbitrary increase of the money wage, by arbitrarily shortening the hours of labor, by restriction of production or by collective bargaining through irresponsible and economically ignorant agencies.

Our objectives may be attained by recognizing our responsibilities as citizens, by the critical examination of methods, by diligently seeking the facts, and by learning that all groups must cooperate fully and effectively if any one group is to receive permanent benefits.

These duties we must assume to the end our children may enjoy undefiled the same privileges that our fathers bequeathed to us.

THE SPIRIT OF THE AMERICAN WAY

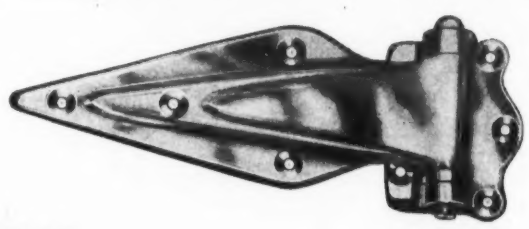
Gentlemen, are we not justified in accepting and spreading the following precepts?

1. Recognizing the fact that all elements in our social structure must be adequately served if any one element is to receive permanent benefit, we must progress in a spirit of constructive cooperation, "with malice toward none," avoiding the development of group antipathies.

2. Let us not only support constructive social and economic objectives but let us resolve that methods adopted for attaining such objectives shall be sound and in conformity with the American tradition.

3. The American way of life, though far from perfect, has fostered the welfare of the common man far more effectively than any culture the world has known. Let us, therefore, strive toward perfecting our traditional way of life and toward preventing its abandonment.

THE BUYER'S GUIDE



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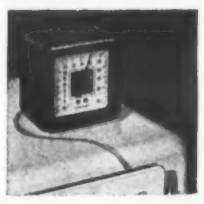

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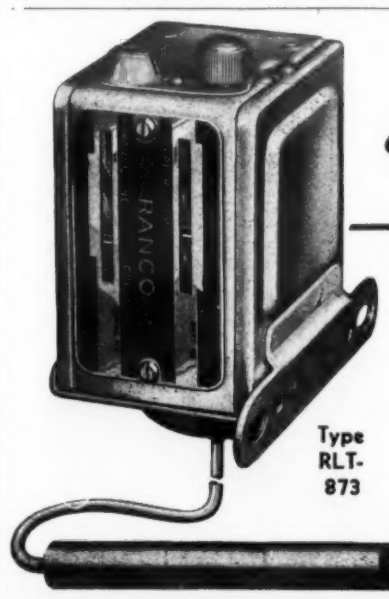

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INDUSTRIAL REFRIGERATION

Modernization and Improvement of Meat Plant Cooling Systems Offers Many Opportunities

By C. G. Quermann, Sales Engineer, Westerlin & Campbell Co., Chicago
Representatives of York Ice Machinery Corp.

A DISCUSSION regarding the application of refrigeration to the packing industry might well be divided into two parts. First, it would refer to such applications as made in a new and modern plant. Second, as they apply to the existing plant, perhaps 20 or more years old, where the size and purpose of the plant have far exceeded the expectations of the designer or original planner.

Since entirely new plants are in the minority, and since the complicated problem of operating some of the over-grown old plants is such an important one, we shall limit the discussion to existing plants.

PRESENCE OF LIQUID AMMONIA

Years ago, operators realized that in attempting to force evaporating systems to meet the increasing demands made of the various coolers, they were over-feeding the systems to the extent that liquid ammonia in varying quantities was carried over the suction to the ammonia compressors.

Liquid in the suction gas results in damage as well as inefficiency. The re-expansion of the liquid in the compressor cylinder causes a great loss in volumetric efficiency, and results in a greater displacement and higher brake horsepower requirements per unit ton of refrigeration.

In addition, liquid often carries particles of grit into the cylinder. It impairs lubrication and, if it returns to the cylinder in "slug proportions," might damage the compressor.

NO BENEFIT GAINED

There is no benefit whatever to be gained through operation with wet suction gas. Any efficient and modern compressor will operate most effectively with saturated or slightly super-heated suction gas, under average ratios. Where the compression ratio is so high as to result in an abnormally high discharge temperature, boosters or compound compression offer a solution.

Engineers now know enough about gas velocities and the point of liquid separation to enable them to install effective liquid traps. There are now available small motor-driven gear-type liquid ammonia pumps to do the work which formerly required large reciprocating ammonia pumps. These small pumps are controlled by a "start-and-stop" float switch, attached to the suction trap.

This application enables the operator to pump the trapped liquid into an evaporating system, or into the liquid ammonia receiver, where it is available for useful work, instead of allowing it to go over to the compressor where it reduces the efficiency and does other harm.

Many engineers, especially those operating the larger plants, are making use of an ice plant device. In many ice plants, a so-called dip tank water heater is used to provide warm water required to thaw ice from cans. The water-heating device generally consists of a closed shell and tube unit, in which compressor discharge gas serves to provide heat for the water.

OIL TRAPPING METHOD

Naturally, the gas undergoes a temperature change. In the packing house refrigerating plant, such a unit, designed to cool the gas approximately 50 or more degrees, acts as an excellent oil trap.

Dry oil traps or even swirl type traps remove only a small percentage of the oil, for it appears that much of the entrained oil is suspended in the gas in such a finely divided form that it does not separate out unless the gas is chilled on a cooled surface to which it can adhere. This efficient and inexpensive trap is remarkable in its performance.

Where cooler rooms are overloaded and forced, there is nothing left for the engineer to do other than devise ways and means of increasing the efficiency of the cooler room coils. If he must work with brine coils, his means are somewhat limited, but there is much room for improvement if the coils are direct expansion. He would do well to explore the possibilities of gravity float control of the ammonia, but here there are many things to consider.

CONTROL IMPRACTICAL

First of all, there must be a suitable place and a proper elevation for the location of surge drums. Secondly, coils must not be too long, for gas velocities are highly important in the successful system of this kind. If all of the many conditions can be satisfied, such a control provides the means for solving the problem.

A majority of rooms are so piped that such a control of ammonia is impractical, but there has been developed an application for such rooms. It is called the modified ammonia recirculating system. The system is very simple in principle, and in operation it is practically automatic. All of the ammonia for the coils in the room (or series of rooms) is expanded into a trap, where a liquid level is maintained by means of float control.

A pump (or pumps) picks up the liquid from the trap and circulates it through the coils. The evaporated ammonia and the excess liquid return to the trap from which dry gas is taken to the compressor.

The efficiency of the coils is increased, because all of the internal surface is wet and, further, because of the high liquid velocity. The coils are really over-fed many times and yet a dry gas is available for the compressor.

Considerable skill and experience are required by the designer, because the size of the trap, the quantity of liquid pumped, the pressure against which the liquid is pumped, and the ammonia velocities are exceedingly important. Guess work and assumptions are very much out of place in the design of such a system. It is predicted that the modified ammonia recirculating systems will be one of the most popular applications of the future.

LOWER TEMPERATURE PROBLEM

If the cooler rooms are piped with brine coils, or if there is a spray system, the improvements possible are rather easily determined. But the operator may still be faced with the problem of producing a lower brine temperature without purchasing additional brine cooling equipment, and without lowering the evaporating pressure. If there are shell and tube brine coolers, the application of float control is proper and does much to improve performance.

However, there may be large open tanks literally filled with coils of great length and many pipes high, and to make it worse, a hand expansion valve for each coil. The modified ammonia recirculating system, however, applies to such an arrangement as well as it does to room coils.

A high volume brine agitator should also be used, so that the benefits of a high brine velocity result. The agitation secured through the operation of circulating pumps seems never really sufficient to do the job.

There will, of course, be rooms in which the character as well as the magnitude of the load is such that a mere increase of existing low side efficiency will not be enough. In many cases, an air cooling or dehumidifying unit works into the scheme of things, and rather nicely solves the problem, provided all of the rules are observed when the unit is selected, and provided that a unit of proper type is used.

The name "air conditioning" is purposely omitted. If "air conditioning" is thought of as a magic thing, impossible performance might be expected from all equipment to which a manufacturer might wish to apply the name.

But the United States Department of Commerce and the National Better Business Bureau define air conditioning as the mechanical control of temperature, humidity, circulation, cleansing of air. Therefore, it will readily be seen that air conditioning is not really new, and that its functions have been carried on for a long time. The use of the blower or fan, and the compact unit is, however, relatively new.

The fan or blower air unit may be of the dry coil or the spray washer type. It is compact, prefabricated at the factory, and easily installed. To be justifiable, it must be of the very best materials, and

(*Concluded on Page 21, Column 1*)

How to Improve and Service Refrigerating Systems In Packing Plants

Mr. Quermann's discussion of the application of refrigeration to the packing industry should interest everyone who has anything to do with the engineering, installation, and servicing of industrial refrigerating equipment. He offers several practical suggestions for modernizing and improving refrigerating systems used in meat processing work.

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Engineer Discusses Problems in Packing Plant Refrigeration

(*Concluded from Page 20, Column 5*)

should be carefully designed to insure proper and efficient operation.

The ratios between amount of air, direct expansion coil, surface, and quantity of brine sprayed must be carefully provided for in the design of spray units. In rooms of 50° F. and below, the spray unit seems to be most practical. Such units do an excellent job of drying up wet rooms, and in keeping ceilings dry. Of course, in some instances the problem is to reduce dehumidification, but this can be best done by regulation of the dewpoint of the air, and by taking care of air distribution so as to eliminate high velocities.

It is generally conceded that air of lower relative humidity, moving at low velocity, will do less drying than moist or high relative humidity air traveling at a very high velocity.

In very high rooms ducts are not often required, but in low rooms the need for ducts is greater. However, modification of this general rule depends all together upon the magnitude of the load per cubic foot of space, the character of the product stored, and the size or shape of the room.

The chill room presents a very interesting picture to the engineer. No one has been able to find much fault with the spray deck, where there is ample head room, a well designed deck, and means of providing air circulation not in direct proportion to refrigerating requirements. There are also many successful chill rooms where brine is sprayed vertically in spray cabinets.

Examine the case, however, of an existing chill room, where there is not too much head room, and little chance of getting more. It is desired to raise rail heights, which means a further reduction in space available above the deck, there is no reason why air washers cannot be used successfully.

The materials used must be of the very best. There must be air volume control, and there must be refrigeration control. If the problem is thought out and considered with a view of duplicating spray deck performance, insofar as cooling, dehumidification and distribution of air are concerned, it should be possible to do an excellent job with washers. In fact, it should provide better control, and lead to economical operation. It requires less head-room, and therefore less cost in building construction.

However, the engineering involved in the selection of air washers for this application is by no means simple. There is always the method of room operation; the question of air duct designs; the problem of length of air travel in wide rooms; the matter of rail height.

All of these questions and problems present themselves, and unless answered and solved correctly, a poor installation may result.

An attempt has been made to suggest certain applications which might be classified as relatively new. A better way would be to classify them as the more simple and less "showy," but probably the most effective of applications.

Such applications will be worthwhile only if the problems meant to be solved are studied with sufficient care, and the parts designed and installed with the same care. Otherwise, there is nothing to be gained.

Frick Develops Freon Compressor Using 2 Vertical Single-Acting Cylinders

WAYNESBORO, Pa.—The Frick Co. has recently put on the market a Freon-12 compressor of the enclosed type, having two vertical single-acting cylinders, with trunk pistons, and using crankshaft, connecting rods, die-cast bearings, discharge valves, manifold stop valves, and many auxiliary parts used in the company's ammonia machines.

Compressor frames or columns are arranged to be one-piece castings, the design being adapted both to the exacting requirements of Freon-12 and of modern production methods.

Cylinders are cast integral with the crankcase, and the bearing housing, adjacent to the shaft seal, is built into the frame, without any joint. Cooling fins were adopted for the cylinder heads of all machines except the larger sizes, which are water-jacketed.

SEMI-STEEL CASTINGS

Castings are made of high grade semi-steel and include sufficient amounts of chromium, nickel, silicon, and manganese to give the desirable denseness, strength, machine-ability, and wear resistance.

The three flanged openings on the side of the frame, where the manifold valves and oil separator are bolted to it, are all on the same level or plane, to facilitate machining; this plan has been followed in locating the crankcase cover plates and openings for the bulls eyes. The anchor bolts are placed in pockets grouped around the base of the frame.

Cylinder diameters are greater than the stroke, which fact gives a correct balance between bearing pressures and valve area. As actually built, the compressor sizes are 5¾ by 4 inches, 7¾ by 5 inches, 8¾ by 6 inches, 11½ by 8 inches, 13¼ by 9 inches, and 15 by 10 inches.

The new pistons are arranged to permit the use of special suction valves of the multiple ring plate type, as shown in the illustration. Machines of the 11½ by 8, 13¼ by 9, and 15 by 10 size have three or more of these valves in each piston head.

VALVE PARTS

Curved valve ports are milled in the solid steel plate forming the top of the cage of each valve, which plate is threaded, screwed into place, and pinned so that it cannot become loose. Entire valve cage is similarly fastened in the piston. Discharge valves follow the same general construction, but working under higher pressures and smaller volumes, do not require as great a lift as the suction valves.

The discharge valves are assembled into a complete safety head, held down between the top of the cylinder and the cylinder head by heavy springs instead of bolts; these allow the head to lift in case a slug of liquid Freon-12 or oil gets on top of the piston.

SEPARATING TRAP

To recover the oil returning from the evaporator, where most of it is liberated from the liquid Freon-12, the suction gas is returned to the compressor through a separating trap at the suction of the compressor. From the trap the returned oil drains directly into the crankcase, a small plate being used as a baffle to keep the oil in the crankcase from being splashed back into the separator, while the gas passes directly to the suction part of the compressor.

Presence of Freon-12 gas in the oil would make it difficult to keep the force-feed oil pump primed if this were located at the end of the crankshaft, requiring a suction lift as in standard ammonia practice; instead, the pump is placed in a pocket at the very bottom of the crankcase, below the normal oil level, and is driven by a roller chain from a sprocket on the crankshaft.

The oil pump on its suction side is fitted with a self-cleaning Cuno filter, making a revolution every 30 seconds, and driven by a small train of gears from the main oil pump drive. The pump itself is made reversible to take care of changes of direction in the rotation of the shaft.

From the pump the oil is forced under pressure to the main bearing directly above, and from there goes through drilled passages and welded oil pipes to the cranks and wrist pins.

Stuffing box bearing is fed through a direct oil line from the pump and the excess oil to this bearing flows to the shaft seal and to the crankcase. The larger machines have mechanical lubricators for feeding oil to the thrust side of the cylinder walls, and into the suction line.

Main parts of Frick's patented "Flexo-Seal" shaft seal are a ring secured by setscrews to the crankshaft; another ring, turned by the first through drive pins, and pressed outward by coil springs; a compressible sealing ring, which makes a gas-tight joint between the front spring retainer and the shaft, as well as against a thin sealing ring of flexible steel; this rotates with the compressible ring on one side while the other slides on a stationary annular bearing face of bronze.

SEALING RING

The compressible sealing ring is made of a material not affected in any way by the Freon-12. The flexible steel sealing ring is turned by small drive pins, and maintains a gas-tight seal against the polished surface of the bronze annular bearing, which itself is sealed by gaskets where it is bolted to the box. The assembly has sufficient flexibility to take up the minute variations caused by the movement of the shaft and changes in temperature and pressure.

Any heat generated is carried away by cooling water circulated through a channel in the bronze bearing. Amount of cooling water used is said to be so small that, in most installations, it is allowed to run through the circuit continuously, and in other cases is shut off after the seal becomes properly run-in.

The machines are regularly equipped with flywheels grooved for V-belt drive, though direct connected synchronous motor, steam, oil or gas engines can also be used. All machines except the 5¾ by 4 and 7¾ by 5 have the outboard bearings beyond the flywheel.

CAPACITY CONTROLS

In addition to the standard operating valves, which include a starting by-pass, safety relief connections, and a suction scale trap, capacity controls are available on the three largest machines. When the capacity control valves are opened, they have the effect of giving 50% clearance by opening a passage to the suction of the machine, half way up the stroke.

The compressors are adapted to booster ammonia service by omitting the oil separator and substituting a pair of ammonia stop valves with a simple by-pass connection.

The problem in low-temperature work, to prevent the drawing-in of air at the shaft seal, is taken care of by stuffing the box with regular ammonia packing, between the rings of which there is an oil lantern, fed from a lubricator above. Positive pressure is maintained on the packing on either side of this lantern by a small pipe leading to the discharge line of the machine.

When applied to ammonia booster service, the machines are said to produce temperatures down to —60° F. In an ice cream plant in Harrisburg, Pa., one of these booster machines, driven by a 10-hp. motor and working on two-stage compression, is said to have enabled the owners to shut down a much larger machine, driven by a motor of more than 150 hp. For work on air conditioning, using Freon-12, the machines have been installed in theaters, department stores, hotels, and similar establishments.

Crane Co. Forms Division of Engineering & Research

CHICAGO—Formation by Crane Co. of a division of engineering and research, with L. W. Wallace, former head of engineering research for the Association of American Railroads, as director, has been announced by Charles B. Nolte, president.

Purpose of the new division, explained Mr. Nolte, is to coordinate all engineering activities of the company, and to further its progress in diversified fields.

Mr. Wallace, who has a wide background of mechanical engineering and industrial management, will direct the originating of new lines of products, development of inventions and patents, and maintenance and improvement of existing products.

THE BUYER'S GUIDE

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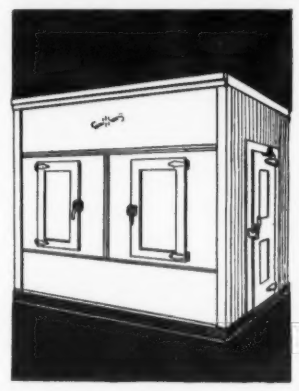

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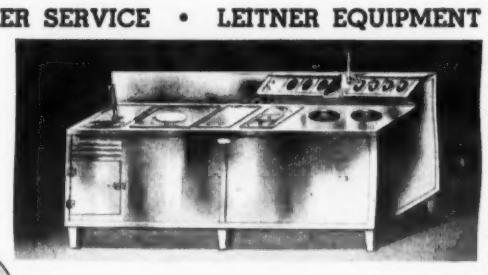

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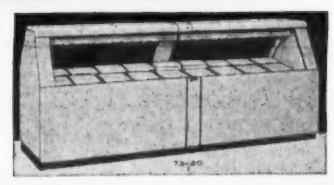

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NEW KOCH ECON-O-CASE

WRITE TODAY KOCH REFRIGERATORS NORTH KANSAS CITY, MO. EXPORT DEPT. 304 E. 45TH ST. N. Y. CITY

Wile Is Chief Engineer For Savage Arms

(Concluded from Page 1, Column 4)

Wile was graduated from the College of Engineering of the University of Kentucky.

The refrigeration department of Savage Arms Corp. manufactures ice cream cabinets, delivery truck refrigeration systems, and other commercial refrigeration products.

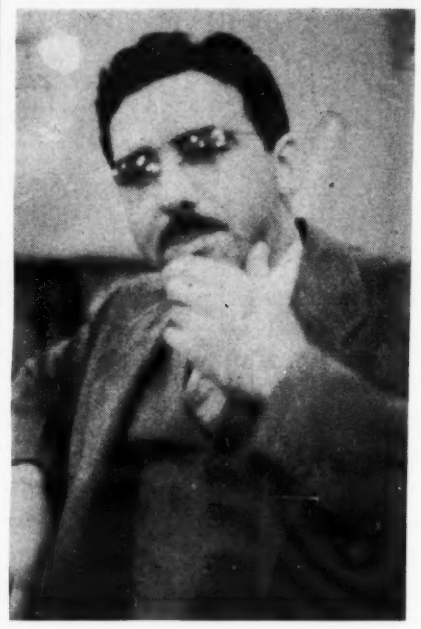
Mr. Wile is a member of the American Society of Refrigeration Engineers, and during the past year was vice chairman of the Detroit chapter of the society. He was member of the Code Committee for the City of Detroit.

For the past several years Mr. Wile has been well-known among the industry's engineers and service men for the articles he wrote and the talks he gave on refrigeration design and service, particularly with reference to the function of the thermostatic expansion valve.

Welling to Manage Grunow Service in New York

NEW YORK CITY—Leonard C. Welling has been appointed comptroller and general manager of Grunow Refrigeration Service, Inc., succeeding James F. Vulter.

Joins Savage Arms



Dan Wile, caught here in a meditative pose by the candid camera of the editor, has been appointed chief engineer of the refrigeration department of Savage Arms Corp. He is widely known throughout industry engineering circles for his studies of and lectures on thermostatic expansion valve operation.

SERVICE METHODS

Method of Calculating Milk Cooling Load And Estimating Size of Condensing Unit Required for Job Is Explained

Montgomery Ward
Main and High Sts
Brattleboro, Vt.

Service Editor:

We would be very glad if you would supply us with the answer to the following problem as it has us puzzled.

We have a two-can milk cooler installation using a Frigidaire condensing unit. It has a low side float and low-pressure control. The evaporator is submerged in an alcohol and water brine tank.

The unit runs perfectly, and after running one day and night it froze 1½ inches of ice all around the brine tank. However, the back pressure would only pull down to 10 inches of vacuum and would not lower the temperature of the brine below 17° F.

When the unit finally kicked off, the vacuum gauge jumped to 5 inches and stayed. Why didn't the back pressure stay at 10 inches and why wouldn't the brine temperature go below 17° F.?

The compressor will pull a 30-inch vacuum. Does this indicate inefficiency of pistons, or just the valves? Could the trouble be in the pistons?

Evaporator is not flooding through. Have 12 pounds of SO_2 in the system, 8 pounds for condensing unit and 4 pounds for the evaporator. High-pressure gauge reads 70 pounds in a 60° room.

Because the compressor will not pull lower than 10 inches I feel it must be inefficient or too small. Do you believe the ¼-hp. condensing unit is large enough for the job? What would be the cause of its running so long and not pulling the vacuum lower than 10 inches?

ARNOLD MERRITT,
Service Department.

Answer: Before too much time is spent worrying about the efficiency of the pistons and valves, let's just figure up how long it would take a brand new ¼-hp. Frigidaire (model "A") condensing unit to do what your job has done in "one day and one night."

On page 41 of the 1930 Frigidaire service manual is given the specifications of a model "A" compressor. It has a ¼-hp. motor and has a capacity of "96 lbs. of refrigeration in 14 hours running time; with an 80° F. condensing medium, 7 inches back pressure, 20° F. evaporator temperature." (96 lbs. of refrigeration in 14 hours equals approximately 6½ lbs. per hour or 936 B.t.u. per hour of operating time.)

These are not just the exact conditions that you have, but they are close enough for round figuring.

You have a low side float type evaporator submerged in a brine tank. Assume the brine tank to be 8 inches wide, 12 inches high, and 12 inches deep. A layer of ice 1½ inches thick was frozen all over this brine tank surface. This figures roughly that the system cooled 31.5 lbs. of water from 60° to 32° F.—then froze it to 32° ice—then cooled the ice to 17° F.

A total of approximately 5,654 B.t.u. was removed from the water to take it to 17° ice. Put this in terms of hours of operation, and approximately 6 hours running time was required to freeze the 1½-inch layer of ice on the brine tank.

Assume there were 40 gallons of water in the milk cooler in which the milk cans were submerged, and the original temperature of the water was 60° F. To cool this 40 gallons of water from 60 to 40° F. would require approximately 6,660 B.t.u., or 7 hours running time.

Next assume that two 10-gal. cans of 75° F. milk were placed in the cooler and cooled to 40° F. This would require approximately 4,760 B.t.u., or in round figures, 5 hours running time.

Cooling the brine in the brine tank is a small matter, so it can be disregarded. Heat leakage is a factor that must be considered, however. Assume the milk cooler to be 4 feet long, 3 feet high, and 2 feet deep, which figures up to 52 square feet of outside surface. This represents a total of 1,501 B.t.u., or approximately 1½ hours running time.

Add these all up and we arrive at roughly 19½ hours of running time—or a busy "one day and one night."

Obviously the system will not be required to do all of these B.t.u. extracting jobs every day—now that it has the water cooled down to 40° F., and an ice accumulation on the brine tank. Its problem now is to cool 20 gallons of milk daily, or twice daily, and overcome the heat leakage. In a 60° F. room the ¼-hp. machine should do a good job of it.

The reason the back pressure would not pull below 10 inches of vacuum is simply because the heat input to the evaporator balanced with the heat extraction capacity of the system at 10 inches of vacuum.

That the back pressure "jumped" from 10 inches to 5 inches of vacuum when the compressor stopped is perfectly natural. There is always a pressure difference or pressure drop between the liquid refrigerant in the evaporator and the gauge located at the compressor.

Two principal reasons for this are (1) the blanket of oil on the liquid and (2) the friction in the valves, fittings, and suction line between the evaporator and the gauge.

A back pressure reading taken at the compressor is always false for it does not register the true pressure or temperature of the liquid in the tubes and header below the oil blanket in the evaporator.

Small Thermostat Added To Friez Line

BALTIMORE—A new Microstat, or small thermostat providing low-cost temperature control for heating or cooling equipment with an exceptionally small differential of control, has been announced by Julien P. Friez & Sons, Baltimore instrument manufacturer.

The Microstat is especially designed for use on low voltages (25 volts), yet it is able to carry an electrical load of 75 watts directly off its contacts without recourse to relays.

The new unit includes such features as the new "Alnico" sintered magnet, pure silver snap-acting contacts, as well as heat treated and seasoned bi-metal elements. It measures ony 3½ x 1½ x 1½ inches. The well-ventilated, pressed-metal case is finished in standard ivory or silver, with a plastic base. A built-in thermometer is included on the unit.

Full-Vision Gas Mask Made By Acme Protection Co.

PITTSBURGH—A new type of gas mask with full vision lenses of scatterproof, laminated, polished plate glass affording 90° vertical and 170° lateral vision has been announced by Acme Protection Equipment Co.

Available in corrugated tube and snout types, the new mask is made with elastic, all-rubber, or permanent non-rubber head harnesses, and with canisters for organic vapors, acid gases, ammonia and industrial smokes, hydrocyanic acid, and all known military gases and smokes.

One-way flap valve ends on the fresh air duct, which close upon exhalation, prevent the build-up of exhaled air in these ducts.

Ice Cream Cabinet Service Men Attend Kelvinator School

DETROIT—More than 60 service men from leading ice cream manufacturing companies throughout the east, south, and middle west gathered here recently at the factory service school conducted by Kelvinator division, Nash-Kelvinator Corp., breaking the school's attendance records for the past 10 years, according to E. R. Legg, Kelvinator's national direct sales manager.

The school was under the supervision of Harry Underwood and Harley Ferguson, of Kelvinator's service department, and was held coincidentally with the annual fall conference of the national direct sales force.

Diagrams, demonstrations, and explanations of Kelvinator's old and new refrigerating systems for ice cream cabinets featured the meeting. In addition, attending service men made installations of various models and watched them tested during the three-day period. A tour of the Kelvinator factory also was a part of the program.

This winter, Kelvinator's direct sales division and service department will again cooperate in holding a large number of one-day sales and service schools throughout the country. These meetings, scheduled for January, February, and March of next year, have been a feature of Kelvinator's direct sales program for a number of years.

Wittmer Heads Service for Emerson Electric Co.

ST. LOUIS—Clarence Wittmer has been appointed national service manager of Emerson Electric Mfg. Co., succeeding W. A. Devlin, who resigned recently to join Universal Cooler Corp.

15,000 Visit Servel Plant During Open House

EVANSVILLE, Ind.—With 5,000 employes working and all departments operating at full capacity in production of 1938 refrigerator models, Servel, Inc. held a four-day open house celebration recently and showed operations of the company to more than 15,000 visitors.

Sixty guides handled inspection of the plant and visitors were conducted in groups of 20 or 30 through machine shops, unit and cabinet manufacture and assembly, welding, porcelain plant, foundry, wood mill, final assembly and crating. A special display of Electrolux 1938 models was arranged in the recreation hall.

THE BUYER'S GUIDE

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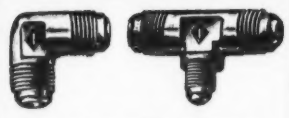

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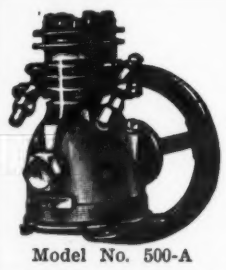

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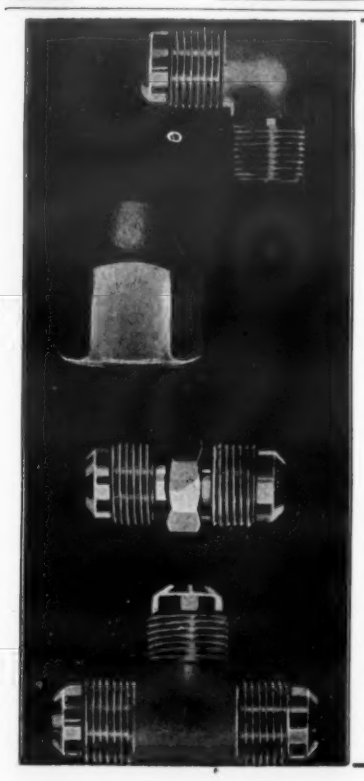

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QUESTIONS

Air-Conditioning Surveys

No. 3138 (Manufacturer, Illinois)—"In a recent issue of your paper you gave the number, size and names of dealers of air-conditioning jobs installed in Omaha, Nebraska, and Houston, Texas. Could you tell me approximately up to what date these installations include? Also what issues of your paper I would have to get to have a complete list of the installations you have published?

"Can you give me any information as to either the number or amount in dollars of humidifying installations made last year?"

Answer: We recently published a booklet entitled "Air Conditioning Surveys" which contains summaries of installations made in 55 United States trading centers. These installations are classified by date, prior to 1935, during 1935 and during 1936. Copies of this booklet are available at 50 cents a copy.

We regret that we have no information on humidifying installations.

Specialty Selling Council

No. 3139 (Dealer, British Columbia, Canada)—"In a recent issue of AIR CONDITIONING AND REFRIGERATION NEWS mention was made of a book entitled, 'How to Make People Buy Specialties.' It was published by the 'Council for the Improvement of Specialty Selling,' New York City.

"Evidently the postal address must be under a different title as I sent them an order but it was returned marked 'Unable to deliver.'

Could you do me the favor of advising the name and address of the firm from whom I can obtain a copy of this book."

Answer: The address which we have for the Council for the Improvement of Specialty Selling, Inc., is 185 Madison Ave., New York City.

Walk-In Coolers

No. 3140 (Magazine, New York)—"We are interested in obtaining the names and addresses of the manufacturers of the walk-in cooler boxes."

Answer: Manufacturers of walk-in cooler boxes will be listed in the 1938 Refrigeration and Air Conditioning Directory, which will be off the press very soon.

First Electric Refrigerator Successfully Marketed

No. 3141 (Utility, New York)—"It has been suggested to us that you have some material which may be useful in helping us to determine what make electric refrigerator was the first household refrigerator to be successfully marketed and when.

"We would appreciate any information you are able to give us along this line."

Answer: All available information on the beginnings and developments of the refrigeration industry and the men who pioneered in the industry was published in the Sept. 9 and Oct. 7, 1936, issues of REFRIGERATION NEWS. We believe you would find information in these issues which would be of value to you regarding the first refrigerators marketed. Copies of these issues are available at the cost of 25 cents per copy.

Seek Authority for June 8 Week Mortality

No. 3142 (Dealer, Pennsylvania)—"Please refer to column 3, page 8, of the October 13 issue of the AIR CONDITIONING AND REFRIGERATION NEWS.

"Please advise us where we can get a chart bearing out the fact that more people die during the week ending June 8th than any other week of the year."

Answer: The information to the effect that more people died during the week ending June 8 than any other week was taken from Paul Mallon's column which appears regularly in the Hearst newspapers.

By addressing inquiry to Mr. Mallon, in care of any Hearst newspaper, we believe that you can get the source of the statement.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning and Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

AIR CONDITIONING and refrigeration engineer desires connection with reputable manufacturer or distributor. Trained in factory schools and eight years' experience with Kelvinator and Carrier Engineering organizations. Capable and qualified to take complete charge of any service, installation, engineering and sales organization. Excellent references furnished upon request. Box 993, Air Conditioning and Refrigeration News.

AGGRESSIVE YOUNG refrigeration sales engineer and department manager desires change. Thoroughly experienced in all sizes of ammonia and low pressure commercial refrigeration, ice plants and air conditioning. Prefer eastern location. Available after reasonable notice to present employer. Compensation open. References furnished. Box 994, Air Conditioning and Refrigeration News.

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COMPLETE LINE of refrigerator display cases, walk-in coolers, and refrigerators for meat markets, grocers, restaurants, etc. Sell with Ehrlich line of compressors, or with any other line of machines. Attractive discounts, also liberal financing arrangements to help sell. 69 years in business. Write for full information and catalog. H. EHRLICH & SONS MFG. CO., Refrigerator Builders, St. Joseph, Mo.

EQUIPMENT FOR SALE

DEALERS! SERVICEMEN! Lower your parts costs. Brand new nationally known: Expansion valves (sealed cartons) $1.95 each; 25 or more, $1.75; 50 or more, $1.65. Delco motors (brand new) ⅛ H.P. $7.35. Brand new nationally known: Evaporators, 2 tray, $6.50; 3 tray, $8.50; 4 tray, $8.95, all complete with doors and trays. Cutler-Hammer thermostats (brand new) $2.95. Glass defrost dishes, 13 x 8¼, $.39. Fan and pulley assemblies (new) assorted sizes, three blade, $.25. Air cooled condensers, large, commercial, suitable up to ¼ H.P. highsides, $.89. Double row condensers suitable for highsides up to 1 H.P., $4.75. FEDERAL REFRIGERATOR CORP., 57 East 25th St., New York, N. Y.

DEALERS! SERVICEMEN! Attention! Jomoco (Johnson Motor) and one other nationally known manufacturer's highsides, ⅛ H.P. less motor, $19.95, with motor, $26.00; ⅛ H.P. twin cylinder (less motor) $22.50, with motor, $29.50. All brand new solenoid water valves (A.P.) odd voltages, $1.00, 110 volt, 60 cycle $2.00. All brand new A.C. motor starting capacitors, $1.39. Brand new genuine Gibson-Trukold-Sparton seals, $3.25 each, 12 or more, $3.00 each. FEDERAL REFRIGERATOR CORP., 57 East 25th St., New York, N. Y.

REPAIR SERVICE

DOMESTIC CONTROLS repaired. Ranco pencil types $1.75. General Electric, Cutler-Hammer, Tag, Penn, Ranco box types $2.00. Bishop Babcock, Majestic, Penn magnetic types $2.50. Mayson and Detroit valves $1.15. Thermostatic expansion valves $3.50. All calibrated to factory specifications. UNITED SPEEDOMETER REPAIR COMPANY, 436 West 57th Street, New York City.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Leaky Valve of Multiple System Blamed By Coroner's Jury for Death of Couple in Detroit

DETROIT—A coroner's jury of five men and a woman agreed Monday afternoon that asphyxiation by methyl chloride gas escaping from a leaky valve caused the deaths of John Koss, 22, and his wife Pearl, 20, in their basement apartment at 70 W. Warren Ave. here Sept. 19.

The jury also charged the owner of the building, Saul Katz, and the manager, William Belcher, of Investment Management Co., with negligence in not ordering proper repairs on the refrigerating system, but found no criminal intent.

Dr. Albert A. Hughes, Wayne County coroner in charge of the inquest, approved the jury's decision, and expressed the opinion that the use of methyl chloride in multiple systems should be prohibited unless combined with an efficient warning agent.

Leo Gage, refrigeration inspector for the City of Detroit Department of Safety Engineering, testified that a collapsed sylphon in the valve, which was a three-way packless type installed in a junction box on the ceiling of the apartment's vestibule, permitted the methyl chloride to escape. He also said that he inspected the entire refrigerating system and discovered slight leaks in four other valves.

When the valve was installed in 1931, Mr. Gage said, it was an approved type, but the approval was rescinded a year and a half later. Mr. Gage made a halide torch test in the basement apartment on Sept. 20 and found traces of methyl chloride gas in the vestibule and its closet, in the bedroom where the bodies were discovered, and in the bedroom closet.

He said that the damage to the sylphon, which was a pin hole, could have been caused by a frostback or by rough handling of the valve.

John A. McCaffery, independent service man who had been servicing both multiple systems in the building for two and a half or three years, testified that on the Wednesday preceding the tragedy he had tested the west unit, with which the Koss apartment was connected, and had checked the refrigerant pressure at 90 lbs. Sunday morning, just before the discovery of the bodies, he rechecked the pressure and found that it had dropped to 62 lbs.

Mr. McCaffery also said that on the Wednesday evening he had examined the valves in the junction box in the Koss apartment and discovered a frostback. He investigated, and found that a valve in an apartment three floors above was open too wide, causing the frostback all the way down to the Koss apartment.

During the period in which he had been servicing the two multiple systems in the apartment building, Mr. McCaffery said, he had had a lot of trouble with valve leaks, although none had ever broken in the basement apartment. He said he had told his employer, Mr. Belcher, and Mr. Katz that the whole system was in bad shape and that the valves should be replaced with larger ones. He had been replacing them as they went wrong, he said, and had put in altogether about 10 or 12 new valves.

Since the Koss deaths, Mr. McGaffery said that every valve in both systems has been replaced with a new one, and that the entire systems themselves have been thoroughly repaired.

Mr. Belcher, who has been manager of the apartment building since the Investment Management Co. took it over about two years ago, said that Mr. McGaffery had told him the valves were weak, and that he in turn had told Mr. Katz. The latter, Mr. Belcher testified, suggested that the valves be replaced as they gave trouble, and that all the valves be replaced several at a time.

Mr. Belcher said he ordered Mr. McGaffery to change the valves immediately, and left him to do so without checking up on him.

Expenditures by Investment Management Co. for Mr. McCaffery's work on the refrigerating systems in the building, Mr. Belcher said, were $341.50 during 1936, $585.49 during the first eight months of 1937, and $649.87 since the Koss deaths.

Mr. Katz testified that he had told Mr. Belcher to do what was needed, and also that he had told Mr. McCaffery to fix the refrigerating systems regardless of cost. He said he had been told by Mr. McCaffery that the valves should be replaced, and had ordered new ones installed.

Called to the apartment when the bodies were discovered, Mr. Katz said, he talked to Mr. McCaffery, who told him that it wasn't the gas that had killed the couple.

Fred Devoist, senior chemist of the Detroit Department of Health, said that he had been called to the apartment Sept. 20, had found food in the refrigerator, but had not tested it chemically because foods are not toxic if they absorb methyl chloride gas and can do no harm if consumed. Methyl chloride gas, he said, affects the respiratory system, causing drowsiness, then partial stupor, nausea, vomiting, abdominal pains, coma, and finally death.

Dr. Plinn F. Morse, pathologist at Harper hospital, said that he had made a laboratory examination of specimens of the stomach, kidney, liver, and blood of both bodies and had found nothing in them chemically poisonous. Cause of the deaths, he said, was methyl chloride poisoning.

Dr. Morse's testimony was corroborated by Dr. William T. Love, who performed the autopsy last September.

Lawrence Sheehy of the homicide squad of the Detroit Police Department said that when he was called to the apartment by the caretaker, Patrick Clancy, just after the bodies had been discovered, he noticed that some liquid was slowly dripping from the junction box immediately over his head when he entered the apartment.

This dripping also was reported by Mr. Clancy, by Mr. and Mrs. Walter Mensior, parents of Pearl Koss and discoverers of the bodies, and by Mr. Gage.

Each of the two multiple systems in the building serves 25 individual refrigerators. The leaky valve in the Koss apartment controlled the units in eight apartments, according to Mr. Clancy.

Several of the witnesses testified that they saw vomit on the bed, on the bedroom floor, on the bathroom floor, in the washbowl, and in towels. Detective Sheehy said that in the vestibule closet he found bundled up a complete change of bedding and a pair of pajamas which had been vomited on but which had dried out.

THE BUYER'S GUIDE

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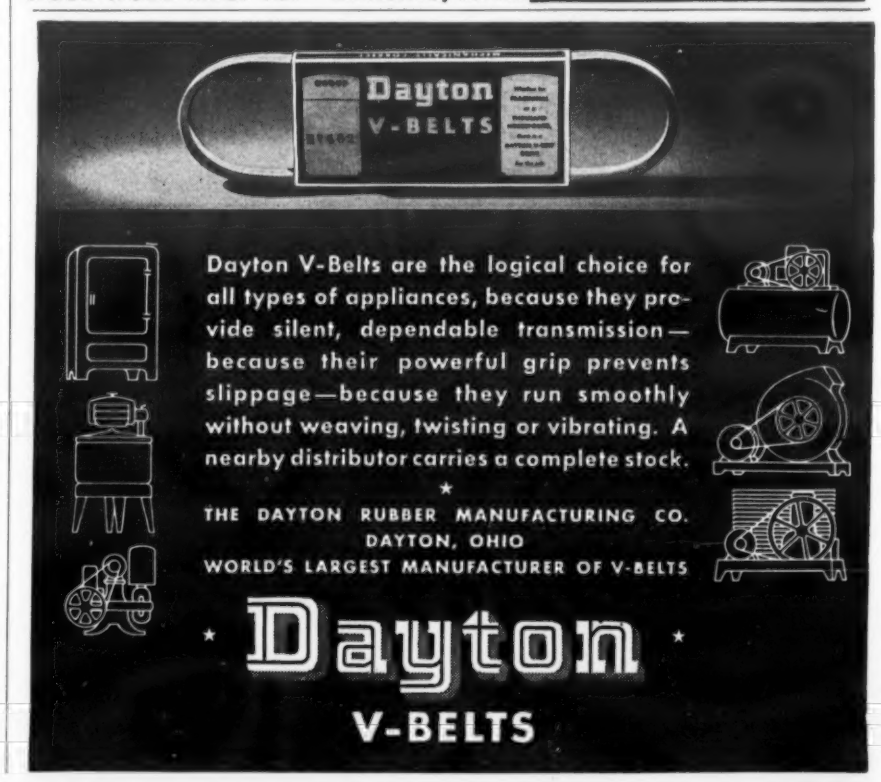
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